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PROGRESS REPORT FOR QUARTER 2 (APRIL – JUNE) 2016

POWER AFRICA TRANSACTIONS AND REFORMS PROGRAM (PATRP)

CONTRACT: AID-623-C-14-00003

August 2016

This report was produced for review by the United States Agency for International Development. It was prepared by Tetra Tech ES, Inc.

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CONTENTS

ACRONYMS AND ABBREVIATIONS

ADME	Djiboutian Energy Management Agency
AfDB	African Development Bank
AFD	French Development Agency
AG	Attorney General
ALSF	African Legal Support Facility
AMCC/GCCA	Global Climate Change Alliance
ARE/RECP	Alliance for Rural Electrification (ARE) and the Africa-EU Renewable Energy Cooperation Programme (RECP)
BEO	USAID Bureau Environmental Office
BPC	Botswana Power Company
CBN	Central Bank of Nigeria
CCGT	Combined Cycle Gas Turbines
COR	Contracting Officer's Representative
CIO	Chief Information Officer (USAID)
COTVET	Council for Technical and Vocational Education and Training (Ghana)
CP	Conditions Precedent
CREE	Mali Commission de Régulation de l'Electricité et de l'Eau
DCA	USAID's Development Credit Authority
DCOP	Deputy Chief of Party
DFID	Department for International Development (UK)
DPM	Deputy Prime Minister (Ethiopia)
EAPP	Eastern Africa Power Pool
ECG	Electricity Company of Ghana
EDD	Electricité de Djibouti
EDG	Electricité de Guinée (Guinea)
EEA	Ethiopian Electricity Authority
EEPCo	Ethiopian Electric Power Corporation
EEU	Ethiopian Electric Utility
EIA	Environmental Impact Assessment
EKT	Ethiopia Kenya Tanzania Transmission Interconnector
EOI	Expression of Interest
EPC	Engineering, procurement and construction
ERC	Energy Regulatory Commission
ESCOM	State power utility (Malawi)
ESIA	Environmental and Social Impact Assessment
EU	European Union
ESMAP	Energy Sector Management Assistance Program
EWURA	Energy & Water Utilities Regulatory Authority (Tanzania)
EXIM	Export–Import Bank of the United States
FIT	Feed-in Tariff
FREEDM	Future Renewable Electric Energy Delivery and Management
FSRU	Floating Storage Regasification Unit
GCE	Generation Capacity Expansion
GDL	Global Development Lab

GEDAP	Ghana Energy Development and Access Project
GoE	Government of Ethiopia
GIS	Geographic Information Systems
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GLOS	Government Letter of Support
GMP	Gas Master Plan
GMR	Gas Market Review
GMSP	Grid Management Support (Ethiopia)
GTP	Growth and Transformation Plan (Ethiopia)
HFO	Heavy Fuel Oil
HOMER	Hybrid Optimization of Multiple Energy Resources
HPP	Hydropower plant
IA	Implementation agreement
IEA	International Energy Association
IEE	Initial Environmental Examination
IFC	International Finance Corporation
IPP	Independent power producer
IRB	EAPP Independent Regulatory Board
JDA	Joint Development Agreement
KETRACO	Kenya Electricity Transmission Company Limited
km	Kilometer
kV	Kilovolt
LEC	Liberia Electricity Corporation
LNG	Liquefied Natural Gas
MERN	Ministère de l'Energie Chargé des Ressources Naturelles (Djibouti)
MLM&E	Ministry of Lands, Mines and Energy (Liberia)
MMscfd	Million standard cubic feet of gas per day
MOEP	Ministry of Energy and Petroleum (Kenya)
MOFEP	Ghana Ministry of Finance and Economic Planning – MOF in body
MOF	Ministry of Finance (Ghana)
MOP	Ministry of Power
MOPET	Ministry of Petroleum (Ghana)
MOU	Memorandum of Understanding
MoWIE	Ministry of Water, Irrigation & Energy (Ethiopia)
MW	Megawatt
NBET	Nigeria Bulk Electricity Trading (PLC)
NDA	Non-disclosure Agreement
NELSAP	Nile Equatorial Lakes Subsidiary Action Program
NEPAD	New Partnership for Africa's Development
NERC	Nigerian Electricity Regulatory Commission
NIPP	National Integrated Power Project
NNPC	Nigerian National Petroleum Corporation
Norfund	Norwegian Investment Fund for Developing Countries
OMVS	Organisation pour la Mise en Valeur du fleuve Sénégal
O&M	Operations and Maintenance
OPIC	Overseas Private Investment Corporation
OPPPI	Office for Promoting Private Power Investment
PA	Power Africa
PATRP	Power Africa Transactions and Reforms Program
PATT	Power Africa Tracking Tool
PCOA	Put/Call Option Agreement
PESRM	PATRP Environmental and Social Review Methodology
PISSA	Project Implementation and Steam Supply Agreement

PIU	Project Implementation Unit
PPA	Power purchase agreement
PPF	Project preparation facility
PRG	Partial Risk Guarantee
PS	Principal Secretary
PSP	Private sector partner
PURC	Public Utilities Regulatory Commission (Ghana)
PSS/E	Power System Simulator for Engineering
PV	Photovoltaic
QIPP	Qua Iboe Power Project
QTAT	Qualified Transactions Assistance Tool
RAED	Renewable and Alternative Energy Directorate (Ghana)
REA	Rural Energy Agency (Tanzania)
REEEP	Renewable Energy and Energy Efficiency Partnership
REFiT	Renewable Energy Feed-in Tariff
RFEOIWC	Request for Expression of Interest with Evaluation Criteria
RFP	Request for Proposal
RFQ	Request for Quotation
SDFS	Suppressed Demand and Forecast Study
SIDA	Swedish International Development Agency
SIS	System Integration Study
SOGA	System Operation Gap Analysis
SOW	Scope of Work
SPP	Small Power Project
SPV	Special Purpose Vehicle
SSA	Sub-Sahara Africa
SSRE	Small-scale renewable energy
STTA	Short-Term Technical Assistance
T&D	Transmission & distribution
TA	Transaction Advisor
TANESCO	Tanzania Electric Supply Company Limited
TCN	Transmission Company of Nigeria
TEDAP	Tanzania Energy Development and Access Project
TREEP	Tanzania Rural Electrification Expansion Project
TSO	Transmission system operator
TSP	Transmission Services Provider
TWG	Transmission Working Group
USAID	United States Agency for International Development
USD	United States dollars
USEA	United States Energy Agency
USG	United States Government
USTDA	United States Trade and Development Agency
VAT	Value Added Tax
VfM	Value for Money
VP	Vice President
VRA	Volta River Authority
WAGP	West African Gas Pipeline
WIAP	Women in African Power
WO	Work Order
WTE	Waste to Energy
ZTK	Zambia Tanzania Kenya Transmission Interconnector

INTRODUCTION

This report's format meets the requirements of Section F.6 (Reports), Paragraph E (Quarterly Progress Reports) of the PATRP Contract, AID-623-C-14-00003.

PATRPs activities are organized around Country Implementation Plans, which promote a holistic programmatic approach to PATRP's objectives in each country. Further, the activities listed in this report incorporate the supplemental scope of work agreed with USAID at the end of March 2016, which sees PATRP's footprint extending into new countries and expanding its existing work streams and associated resources in others. These activities have also been reflected in a new PATRP Work Plan and Performance Management Plan for FY 2016 that was developed during the quarter.

In terms of the organization of the report, Part 1 presents PATRP's activities on a country or regional level, which also incorporate, and promote the following objectives set forth in PATRP's contract:

- Objective 2: Late-Stage Transaction Support.
- Objective 3: Support for Small-Scale Projects, Mini-Grids, and Rural Electrification.
- Objective 4: Regulatory and Institutional Strengthening and Policy - (a) Electricity Transmission & Distribution (T&D)/Regional Trade, and Institutional Strengthening of Power Pools; (b) Policy and Regulatory Reform; (c) Natural Gas; and, (d) Mobilizing Finance and Building Institutional Capacity.

Part 2 summarizes PATRP's activities under Objective 1 (Institutional Support to the Office of the Power Africa Coordinator) of its contract.

Part 3 presents any issues or barriers faced by PATRP in the course of its implementation of the contract objectives, and any solutions that have been deployed to address those barriers.

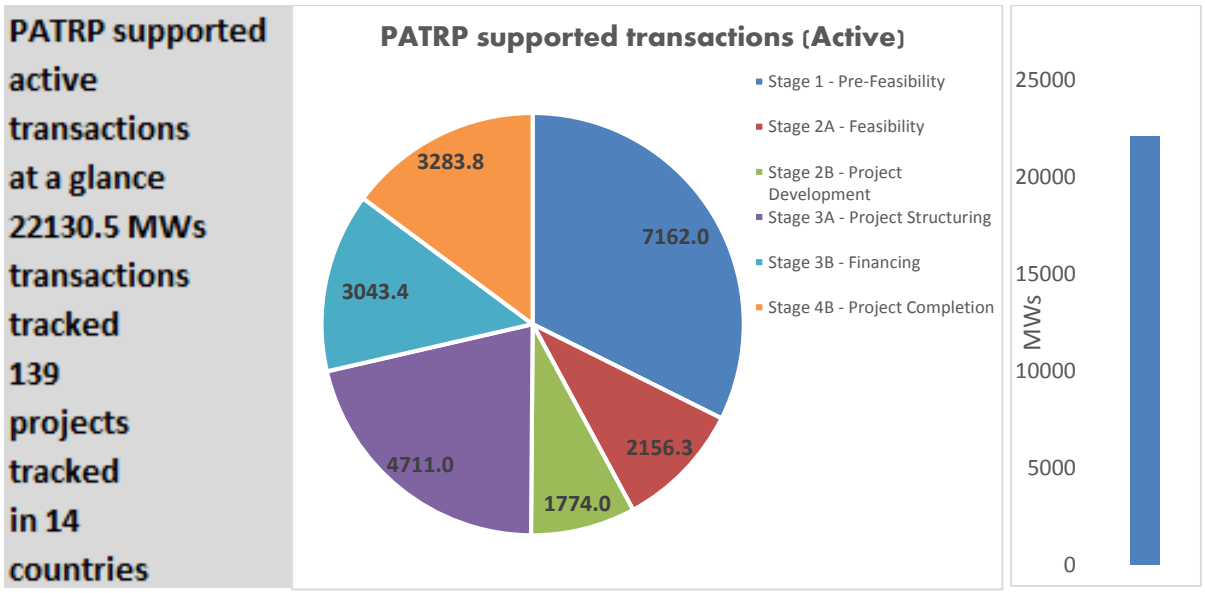
Part 4 lists the results achieved by PATRP during the quarter based on the performance indicators (as approved in the Performance Management Plan).

PART I – PROGRESS MADE ON OBJECTIVES BY COUNTRY OR REGION

OVERVIEW

At the end of June 2016, PATRP was providing transaction support to approximately 139 active transactions in 14 countries, with a total capacity of approximately 22,130 MW. In terms of overall progress on advancing new generation projects, PATRP has provided support on gas, wind, and hydro transactions reaching financial close in Ghana, Nigeria, Kenya, Senegal, and Tanzania – these projects represent a total of 1,146.5 MW of generation capacity.[1] The following figures and graphs show the composition of the abovementioned 139 transactions by country and stage, and are taken from the Power Africa Tracking Tool (PATT).

Figure 1. Dashboard of PATRP active transactions



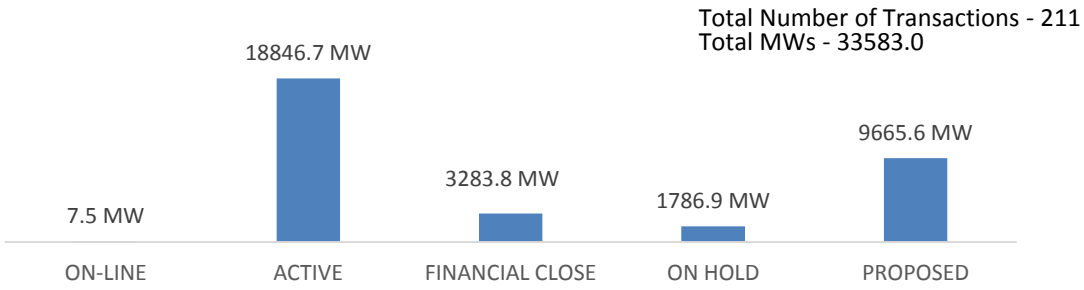
In addition to the active transactions being supported by PATRP, there are a further 9,665 MW of proposed transactions (or a pipeline) that are currently being considered for Power Africa/PATRP support. PATRP will vet this category of proposed transactions in Q3 2016, to determine whether they should be re-classified as active transactions.[2] Further, there are approximately 1,786 MW of

[1] 'Financial close' of a transaction represents one of the critical project milestones that PATRP tracks. Financial close refers to when developers/ sponsors on a transaction have concluded with lenders a complete package of permanent financing on a non-recourse, limited recourse, or balance sheet basis, and any condition precedent to the initial drawdown of funds has either been satisfied by the developers/sponsors or waived by the banks, and the developers/sponsors are in a position to draw down on the financing being made available.

[2] Unless otherwise stated, 'active' transactions also include those transactions that have reached financial close and/or are commissioned. They do not include 'on hold' transactions.

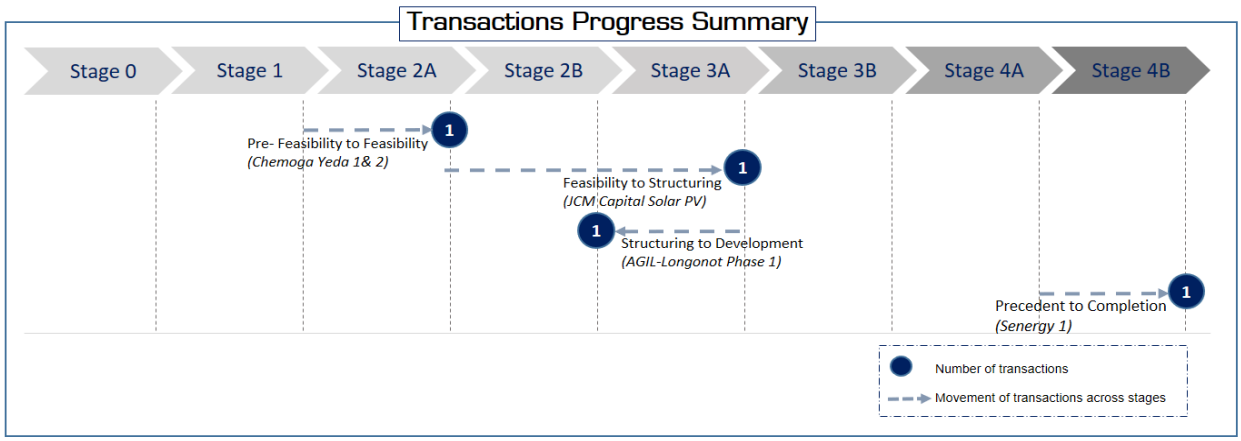
transactions that are on hold, where there has been little or no recent activity and little prospect of progress in the near term. This information is illustrated in Figure 2 below.

Figure 2. Breakdown of total PATRP transactions



In terms of advancing the existing portfolio of transactions toward financial close, Figure 3 below illustrates the number of transactions that have moved from one stage of the project cycle to the next (or reversed) during the reporting period. You will note the positive movement for the transactions in Ethiopia (Chemoga Yeda HPP 280 MW) and Malawi (JCM Solar 30 MW), which are discussed in more detail in the remainder of this Part 1. As reported previously, Senergy (Senegal; solar PV 29 MW) has now progressed to Stage 4B after reaching financial close in Q1 2016.

Figure 3. Movement of active PATRP transactions through the project cycle stages during last quarter



In terms of overall trends and observations, the quarter saw a significant milestone being reached in **Nigeria, with PPAs for 14 solar IPPs being initialed**, totaling over 1,000 MW of potential generation capacity.

Elsewhere, following efforts by PATRP and the Kenya Power Africa team to resolve the allocation of transmission infrastructure risk, the PPA for **Kipeto wind project (100 MW)** was signed on June 2 – this leaves issuance of the Government Letter of Support as the critical path item for financial close. Power Africa Partners involved in the project include GE, OPIC, the African Infrastructure Investment Fund, and IFC.

In Ghana, on the **Bridge Power (400 MW) project,** negotiations on the Power Purchase Agreement and Put & Call Option Agreement have been concluded, and the project documents have been submitted to Parliament for approval, whose session has been extended until the end July. Power Africa Partners involved in this project include Endeavor, GE, and potentially OPIC.

In terms of transactions to watch, PATRP continues to support the **Metahara Solar PV (100 MW) project** in Ethiopia – the country's first international competitive tender for new generation. PATRP is providing legal, regulatory, technical, and financial advisors. Sixty four companies responded to the Request for Qualifications (RFQ) previously issued by EEP, with 34 companies prequalified by EEP. The Request for Proposals (RFP) and Power Purchase Agreement (PPA) were finalized during the quarter, with some 20 prequalified bidders paying the RFP fee and receiving both documents. The Implementation Agreement (IA) and Grid Connection Agreement are expected to be shared with bidders soon, as reported below. Further, a site visit and bidder's meeting occurred in June, and proposals by the qualified bidders are expected to be submitted by 1 September 2016

DJIBOUTI

PATRP maintains a dedicated transaction advisor for Djibouti. The transaction advisor also oversees a four-pronged work plan that is directed at improving Djibouti's' legal and regulatory environment to attract, enable, and facilitate the development and financial closure of IPPs. These tasks have been designed in collaboration with relevant officials at the Ministère de l'Energie Chargé des Ressources Naturelles (MERN) and respond directly to MERN's requests for support in implementing Djibouti's IPP law, such as the development of licensing and concessioning processes and large-scale IPP procurement procedures. The following figures show the composition of active Djibouti transactions (that have not yet reached financial close) by stage.

Fig. 4. Breakdown of transactions

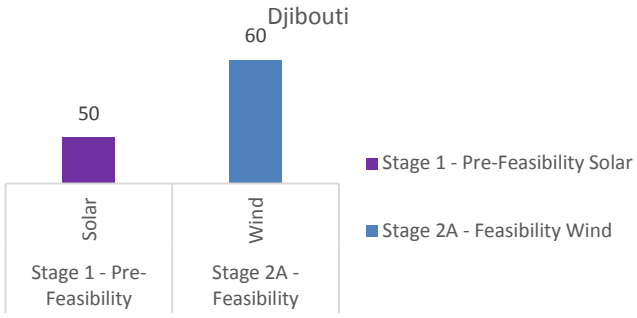


Table 4. List of generation transactions

Name	Stage--1, 2a, etc.	Technology--Wind, Solar, etc.	MW
Grand Bara	Stage 1 - Pre-Feasibility	Solar	50
North Ghoubet Tadjoura--Wind	Stage 2A - Feasibility	Wind	60

Summary of PATRP'S progress in Djibouti during Q2 2016

Grand Bara solar PV (first phase 50 MW, expanding up to 300 MW). PATRP discussed with senior officials at MERN and representatives of a German company concerning the 300 MW solar power production project at Grand Bara, and the next steps to advance the project for the first unit of 50 MW. As reported previously, the Implementation Agreement has been signed, and the focus is now on the initial Power Purchase Agreement (PPA) with Electricité de Djibouti (EDD), and on finalizing the terms for the Land Lease Agreement (LLA) with the Djibouti Government. Finalization of the PPA will require additional technical discussions between the German company and EDD, as well as a final decision on how the substation for the project is to be funded. Financial close is targeted for the end of 2016, although this is dependent upon execution of outstanding documents, including the PPA with EDD. PATRP is working with MERN to advance these documents. The latest version of the LLA is with the Djibouti Ports and Free Zones Authority (DPFZA), since this is the entity that receives the land from the Government of Djibouti, and following such land transfer, will be in a position to lease the subject land. As a result, the DPFZA will be responsible to finalize the LLA, once the intra-Government arrangements for the transfer are complete.

North Ghoubet Tadjoura wind project (60 MW).[3] PATRP engaged with representatives from a Qatari company about the status of the project and learned that internal discussions are underway between the company and the Qatar Development Fund (QDF) in connection with the legal entity that would receive the support from the QDF. PATRP continues to work with stakeholders to try to find solutions

[3] This is a proposed transaction.

to address concerns concerning potential conflicts of interest between the developers and proposed offtaker(s). In these discussions, MERN officials have made it clear that any change in the structure of the transaction would require the involvement and full endorsement of the QDF.

East Africa Power Pool (EAPP). In June, the declarations for membership of the EAPP were signed by the Minister of Energy in Djibouti, as well as the CEO of EDD. PATRP supported submittal of these documents to the EAPP secretariat to move forward with the process. PATRP is now working internally with USAID to determine channels of technical support for MERN and EDD as the two institutions join this regional group. PATRP has encouraged Djibouti's membership in the EAPP as it will act as a positive force for reform of the Electricity Supply Industry in Djibouti.

Implementing Djibouti's IPP law. PATRP engaged with senior officials at MERN and exchanged ideas on the development of an IPP Action Plan that will set forth a strategy for procurement of IPPs addressing both unsolicited bids and competitive tendering. In this context, it was concluded that the drafting of an Integrated Resource Plan for the country would be the first priority, so that any procurement plan for new generation would be credible. Subsequently, PATRP developed and presented an outline Integrated Resources Plan, which was well received by local stakeholders – this will be built out in the next quarter.

ETHIOPIA

PATRP maintains a resident transaction advisory team in Ethiopia, which now includes a Local Legal Advisor, and a Project Finance Advisor hired as part of PATRP's activities set forth in the supplemental scope of work finalized late in Q1. These new team members join the existing Lead Transaction Advisor and Renewables Transaction Advisor. Beyond its transaction advisory assistance, PATRP is also working to strengthen Ethiopia's power grid for the integration of new generation (conventional and renewables), and for the sustainable and efficient operation of the national power grid for the delivery of quality and reliable electrical services to consumers. Additionally, PATRP is now extending its Ethiopian work streams to encompass the development and implementation of a pilot rooftop solar program, and modernization of the distribution grid.

The following figures show the composition of active Ethiopian transactions (that have not reached financial close) by stage, and how they have advanced through the project cycle.

Fig. 6. Breakdown of transactions

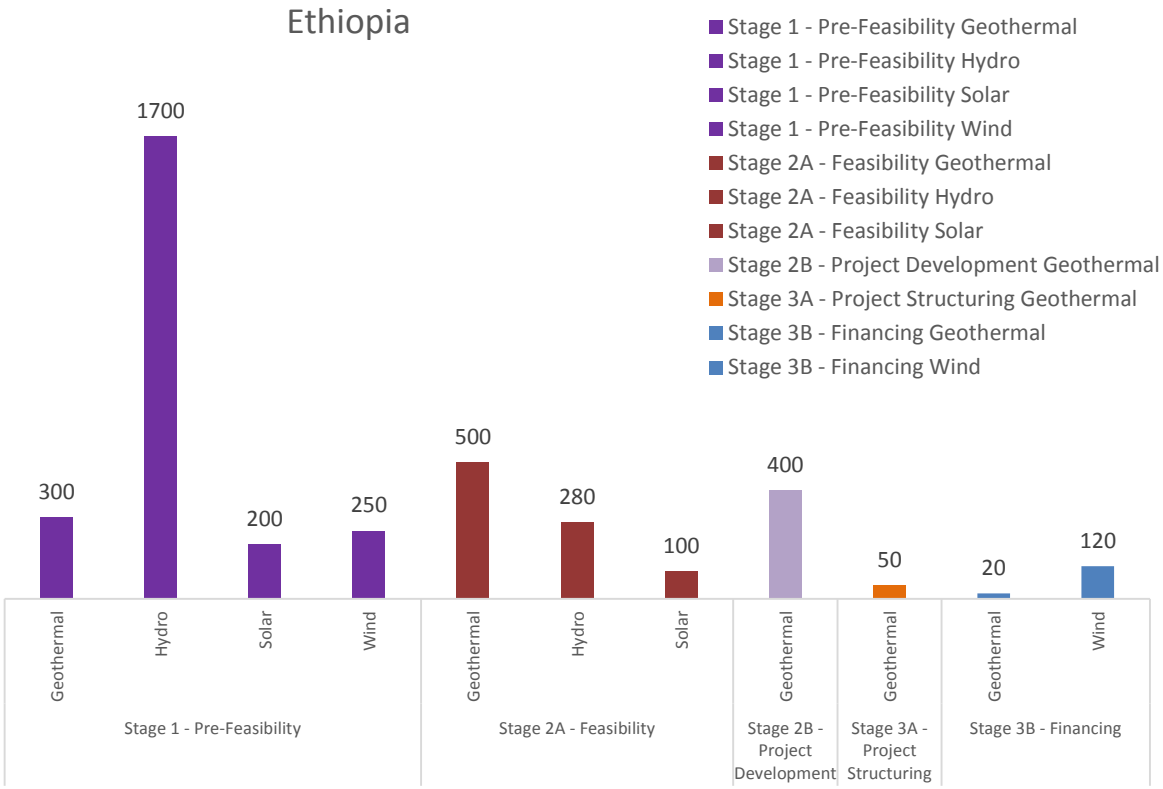


Fig. 7. Movement of transactions by Stage

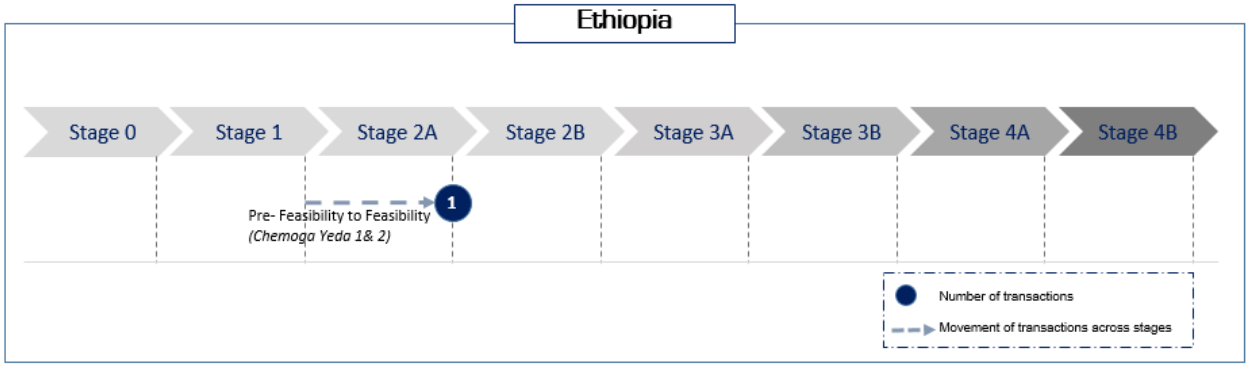


Table 5. List of generation transactions

Name	Stage--1, 2a, etc.	Technology--Wind, Solar, etc.	MW
Corbetti Geothermal Phase 1--Geothermal	Stage 3B - Financing	Geothermal	20
Aysha Wind Farm--Wind	Stage 3B - Financing	Wind	120
Corbetti Geothermal Phase 2--Geothermal	Stage 3A - Project Structuring	Geothermal	50
Corbetti Geothermal Phase 4--Geothermal	Stage 2B - Project Development	Geothermal	200
Corbetti Geothermal Phase 3--Geothermal	Stage 2B - Project Development	Geothermal	200
Chemoga Yeda 1 & 2--Hydro	Stage 2A - Feasibility	Hydro	280
Abaya & Tulumoya--Geothermal	Stage 2A - Feasibility	Geothermal	500
Metahara Solar Project --100 MW--Solar	Stage 2A - Feasibility	Solar	100
Solar Project 1--Solar	Stage 1 - Pre-Feasibility	Solar	100
Solar Project 2--Solar	Stage 1 - Pre-Feasibility	Solar	100
Debre Birhan Wind Project--Wind	Stage 1 - Pre-Feasibility	Wind	100
Tams Hydro Project--Hydro	Stage 1 - Pre-Feasibility	Hydro	1700
Geothermal Site 1--Geothermal	Stage 1 - Pre-Feasibility	Geothermal	300
Iteya Wind Project -- Wind	Stage 1 - Pre-Feasibility	Wind	150

Summary of PATRP's progress in Ethiopia during Q2 2016

Metahara 100 MW Solar. The PATRP legal and technical advisory teams met in Ethiopia the week of May 2 to finalize the terms of the Request for Proposals (RFP). They met with EEP and consulted on key issues regarding the RFP, the PPA (and technical schedules), and the amendment to the Energy Proclamation/Regulation. Drawing up on these discussions, a final RFP and PPA was provided by PATRP to EEP on May 6, and thereafter shared with the qualified bidders.

Thereafter, a site visit was held on June 1-2 in conjunction with a bidders' conference. PATRP supported both events, with PATRP legal and technical teams present. There were 25 companies present for the site visit and 31 companies attended the bidders' conference. PATRP assisted EEP with its response to clarification questions from bidders on the RFP documents.

In parallel, PATRP supported the development of a Connection Agreement, and Implementation Agreement, which have been aligned with the terms of the RFP. We anticipate sharing the Connection Agreement with EEP and bidders early in Q3. With respect to the Implementation Agreement, a revised version was provided to the Ministry of Finance in June; however, we are awaiting final approval before it can be circulated to potential bidders.

Understandably, bidders are anxious to see the document. The delayed release of this document has been raised by the PATRP team with USAID/Ethiopia. As matters currently stand, qualified bidders have until September 1, 2016 to respond to the RFP.

Chemoga Yeda I and II Hydro project 280 MW. PATRP met with EEP and discussed how it can best assist with the proposed IPP competitive procurement for the Chemoga Yeda HPP. EEP also provided pre-existing technical and environmental reports that were conducted for the project. The latter report was shared with PATRP's environmental specialist to allow for an initial assessment on the environmental impact.[4] There is significant technical work that needs to be done before releasing the RFP, and PATRP has identified a hydro generation expert to assist on this transaction and finalize the bid document. An initial assessment has focused on the complex civil works necessary, and the extent of tunnels (approximately 10km of tunneling). A more detailed technical review will be a priority for the next quarter. In parallel, PATRP's legal team reviewed the terms of the RFP and provided a marked-up version to EEP on June 23. No response had been received from EEP as at the end of the quarter.

Corbetti Geothermal 20 MW (Phase 1). With PATRP's support, the Minister for the Ministry of Water, Irrigation and Electricity signed the requisite letters in June to re-engage its external legal advisors for this project (funded through an ALSF grant) after a prolonged absence. Re-engaging the legal team is critical to finalizing the outstanding terms of the PPA and Implementation Agreement. In this respect, the project sponsors sent a final draft of both the PPA and IA documents on June 15 to the GoE for input, and with a request for a timeline on when to finalize the agreements. As at the end of the quarter, the documents are under review by the GoE's external legal team and it is hoped that further progress in finalizing the contract terms can now be achieved early next quarter.

Ethiopia Grid Management Support (GMSP). Under the GMSP work stream, PATRP is providing several key technical studies essential to ensuring a modern and efficient electricity grid that is prepared for renewables integration.

During the quarter, the GMSP team traveled to Ethiopia to conduct individual and group meetings with stakeholder, during which clarifications were secured on previously gathered information, additional information was obtains, and overall progress was made on developing the draft grid code and the system integration study. Advancing these two documents to 'final drafts' is the goal during the next quarter. In addition, the GMSP team is likely to be engaged on the abovementioned generation procurements, to ensure that – from a system planning perspective – the evacuation of power from these projects will be addressed.

PPP/EPC Procurement of New Generation. PATRP is assessing how it can support the EEP as it launches procurements of over 1,300 MW for new generation either through public–private partnerships or by using engineering, procurement, and construction (EPC) arrangements.

The immediate focus has been on the following RFQs launched by EEP for "EPC and Financing" of three new projects: Adama Phase III (150 MW), Ayesha (300 MW), and Debre Behane (100 MW). EEP has indicated its desire to progress to fully-fledged RFPs in the coming months. PATRP will be deploying a wind expert next quarter to provide a detailed assessment of the proposed projects, and recommend if and how PATRP can support EEP on these activities.

Beyond the Grid/Small-Scale Renewable Energy (SSRE). PATRP discussed with a small scale wind developer their planned projects in Ethiopia, which include providing 0.5 kW wind-based home systems that will enable 10,000 households to have access to electricity. They are in the process of securing a Letter of Intent with the authorities in Ethiopia, after which the discussions will continue

[4] A PESRM checklist (and supplemental hydro checklist) has been completed for this project.

on possible PARTP support. In addition, PATRP reviewed and provided comments to USAID/Ethiopia's scope of work for mini-grids and rural electrification efforts. The scope focused on conducting feasibility studies for a large number of villages to determine: (i) best technology and financial options for mini-grids in 150 villages; (ii) best technology and financial models for hybrid solutions in 29 villages with mini-grids already operating with diesel engines; and, (iii) solar irrigation sites.

Ethiopia's rooftop solar program. The program targets affordable housing and low-income communities in peri-urban areas of Addis Ababa. The program is targeting 70,000 buildings with an expected population of 250,000 people. PATRP SSRE traveled to Ethiopia to gather preliminary data on the program and develop an analysis on the Levelized Cost of Electricity (LCOE) under four scenarios – one run was conducted for the rooftop system while three additional runs were conducted to analyze the LCOE of larger utility scale projects. While the analysis shows that utility scale projects have lower LCOE compared to the rooftop solar program, other factors such as land and resettlement issues as well as impact from capacity building efforts to local private developers play a significant role in supporting the rooftop solar program efforts. Further activity is planned for next quarter.

EEU Activities. During the quarter, PATRP conducted an initial investigation at EEU to assess what steps should be taken to modernize their operations, with a view to introducing greater effectiveness and promoting loss-reduction measures. The investigation focused on the following areas:

- Meter to Cash operations
- Information and Communications Technology
- Distribution Network Infrastructure and related operations
- Overall Data Measurement and Data Collection
- Skill Gaps Within the Organization

Based on PATRP's assessment, it has recommended to USAID/Ethiopia that the near term priority is to focus on improving Meter to Cash Operation, thereby reducing Aggregate Technical & Commercial (AT&C) losses and collection losses.[5] The focus for developing a model for efficient operations can be Addis Ababa (or a part thereof), since it represents about 55% of the revenue. The model can then be duplicated in other regions. The assistance should cover all aspects of meter to cash from metering operations & processes, energy accounting, metering equipment standards, billing and collection. PATRP will continue its dialogue with USAID/Ethiopia on this proposed work stream during the next quarter.

[5] EEU calculated Aggregate Technical & Commercial (AT&C) Losses are around 22%. In addition, collection losses (difference between billed and collected amounts) are approximately 25%.

GHANA

In Ghana, PATRP maintains a resident power sector transaction advisor, who provides support on power and renewable energy projects, together with a gas advisor who provides technical and institutional support to the Ministry of Petroleum. In support of these activities, PATRP is also providing short-term technical assistance (STTA) to perform an electricity demand forecasting, suppressed demand estimation, VRA power plant rehabilitation, gas market update, LNG advisory and LNG capacity building.

The following figures show the composition of active Ghana transactions (that have not yet reached financial close) by stage.

Fig. 8. Breakdown of transactions

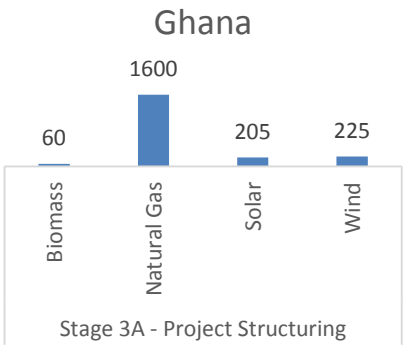


Table 6. List of generation transactions

Name	Stage--1, 2a, etc.	Technology--Wind, Solar, etc.	MW
African Plantations for Sustainable Development (APSD)--Biomass	Stage 3A - Project Structuring	Biomass	60
Aboadze Gas	Stage 3A - Project Structuring	Natural Gas	450
Ghana 1000 Phase 1A--Gas	Stage 3A - Project Structuring	Natural Gas	375
Ghana 1000 Phase 1B--Gas	Stage 3A - Project Structuring	Natural Gas	375
Bridge (Fast) Power / Ghana 300 Phase 1--Gas	Stage 3A - Project Structuring	Natural Gas	194
Bridge (Fast) Power / Ghana 300 Phase 2--Gas	Stage 3A - Project Structuring	Natural Gas	206
S/C--Solar	Stage 3A - Project Structuring	Solar	50
Mere Power Nzema -Solar	Stage 3A - Project Structuring	Solar	155
Upwind Ayitepa Phase 1--Wind	Stage 3A - Project Structuring	Wind	150
Upwind Ayitepa Phase 2--Wind	Stage 3A - Project Structuring	Wind	75

Summary of PATRP's progress in Ghana during Q2 2016

Windiga – 20 MW Solar PV. This new project was approved as a qualified Power Africa transaction; PATRP will support, as needed.

Bridge Power – 400 MW (Phase 1a-144 MW, Phase 1b-50 MW, Phase 2-200 MW). Following months of negotiation, the PCOA for Early/Bridge Power and revised PPA were submitted to Parliament, with a decision expected in July. PATRP communicated regularly with stakeholders to track discussions on the PCOA/PPA.

Ghana 1000 Phase 1A. This project's Financial Close date has been pushed to June 2018 due to the Government of Ghana's perceived over supply of power over the next several years (see below).

Power Requirements being reassessed. The Ministry of Power and Ministry of Finance have both indicated that Ghana's power supply has been stabilized for the next few years (in terms of available generation capacity as several directly negotiated and acquired plants have been commissioned), and they will therefore only need to plan for the power plants to consume gas coming out of Sankofa Field in 2018 and imported LNG supplies. Unless the power supply-demand balance moves adversely, the Government does not require additional capacity in the short term. In addition, over the next few years there is already significant public sector and IPP capacity coming online.

Rehabilitation of existing VRA Thermal Plants including engagement of a Performance-Based Operator. PATRP submitted its comprehensive three-volume final report on Rehabilitation of VRA's thermal power plants, along with a bid package for the appointment of a Performance based O&M contractor. The report and presentation was well received by VRA/GoG, and PATRP has been asked to provide further transaction advisory support in its implementation.

Power Sector Finance and the Joint Utilities Finance Group. The financial situation of the Ghanaian power and gas sectors has come under severe stress. Throughout the quarter, the PATRP team has been actively engaged with an interagency work group to assess the magnitude of the cash shortfall, a prerequisite to developing a cash waterfall mechanism to address the challenge. In meetings with USAID/Ghana, the Minister of Finance and the supervising Minister for Power outlined their commitment to ensure that the power sector is operated on a commercially sustainable basis in the future. In this context, following its briefing to the Joint Utilities Finance Group (JUFG), which is comprised of energy sector CEOs, the PATRP team continued to work with the staff of the JUFG to update their monthly Consolidated Revenue and Cash flow Summary for power sector entities, with actual figures from January to June 2016 and forecast from July to December 2016. The JUFG has been tasked by the Minister of Finance and supervising Minister of Power with formulating recommendations for the GOG's efforts to resolve the sector's financial difficulties. This work is central to GOG's efforts to estimate cash flow shortfalls in an effort to resolve the circular debt problem in the sector and move the sector to a more sound financial footing, which is essential to sustain a healthy IPP sector in the country. The Sector Cash Flow and Securitization Model was originally developed by PATRP for long-term planning, but has been modified by PATRP to incorporate and model month-to-month cash flow for the JUFG.

Off-Grid/Small-Scale Renewable Energy (SSRE). During the quarter PATRP completed a successful visit to the pilot mini-grid system in operation at Pediatorkope, an island community in the Volta region, to benchmark public sector-led mini grid investment. As part of this visit, PATRP also assessed lakeside and inland villages identified by MOP/RAED/PATRP for piloting and implementation of a scalable mini-grid system. In all, PATRP met with six companies, a university, MOP, GEDAP, District Administration, and community leaders of six rural and remote communities in the Afram Plains South. Outcomes from this visit include a draft Job Task Analysis (JTA) for solar PV installers to be reformatted to Ghana's occupational standards document for validation/review by a committee. Also, PATRP identified several recommendations to help implement the mini grid policy established by MOP, including the development of pilot mini-grid projects under a Build-Own-Operate-Transfer (BOOT) arrangement by the private sector; PATRP would support the development of these pilots through pre-screening of suitable villages and management of the tendering process for the pilots.

Gas Master Plan. As previously reported, Ghana's Gas draft Master Plan (GMP) was drafted with PATRP's review and recommendations. During the quarter, PATRP's gas advisor participated in meetings convened by MOPET and MOP to finalize the GMP and pave the way for its formal adoption. The working group reached consensus on a Cabinet Memorandum commending the GMP, which was presented by MOF/MOP/MOPET to Cabinet on June 9, and was approved. With the approval of the Gas Master Plan, the Government now has completed one more of the conditions

precedent for entry into force of the MCC Compact II. Dissemination of the GMP is planned in the coming weeks.

Reverse flow in WAGP - Gas Transportation Tariff Analysis. PATRP developed an analysis of the tariff offered by WAPCo for transportation of natural gas through the WAGP off-shore gas pipeline between Takoradi and Tema. The analysis was prepared in support of the Government in its negotiations with WAPCo on the transportation tariff to be applied for gas deliveries in the reverse flow segment (Takoradi-Tema) of WAGP. The government has accepted PATRP's analysis and is preparing to start negotiations with WAPCo.

LNG Training and Capacity Building Work Shop. MOPET and MOP signaled their satisfaction with content and outcome of the LNG workshop conducted by PATRP on June 1-2 in Accra. The workshop provided a detailed assessment of the international LNG market including pricing, terms of payment, and competitive procurement, market for local gas, and industrial gas demand. Participants included the senior officials from the Ministries of Petroleum, Power, and Finance, and their associated agencies, including the Petroleum Commission, Energy Commission, National Petroleum Authority, Public Utilities Regulatory Commission, Ghana National Petroleum Corporation, Ghana National Gas Company, Bulk Oil Storage & Transportation Company, Volta River Authority, GridCo, Electricity Company of Ghana, and the Millennium Development Authority. Around 90 participants attended the Workshop each day (24% of which were females). MOP requested that a workshop on PPAs be conducted; this would be a reprise of a workshop delivered in 2015.

Gas Sector Issues Pending Resolution. PATRP prepared a position paper on outstanding gas sector issues requiring resolution on 24th June, and submitted it to the Petroleum Minister. The paper covered all important gas to power sector projects including the expansion of gas infrastructure and import of LNG. The paper has been accepted by the Ministry and PATRP has been invited to participate in meetings to monitor progress on outstanding issues.

Advisory Briefing Paper on Liquefied Natural Gas. PATRP submitted its Advisory Brief on LNG strategy to the Ministry of Petroleum (taking into account overall gas supply situation). The final report shall be submitted after incorporating stakeholder comments. PARTP is also participating in regular meetings to formulate an LNG strategy for Ghana.

KENYA

The PATRP team in Kenya was augmented in Q2 with the addition of a Beyond the Grid (BTG) Advisor, Part-time Community Engagement Advisor, Part-time Geothermal Advisor, and KenGen Utility Advisor. These new staff were engaged as part of PATRP's activities set forth in the supplemental scope of work finalized late in Q1, and join the existing Transaction Advisor and Technical Resident Advisor in Kenya.[6] In addition, PATRP is performing grid management work through short-term technical assistance, and supporting capacity building at Kenya Power's Training Institute.

The following figures show the composition of active Kenya transactions (that have not yet reached financial close) by stage, and how they have advanced through the project cycle.

Fig. 9. Breakdown of transactions

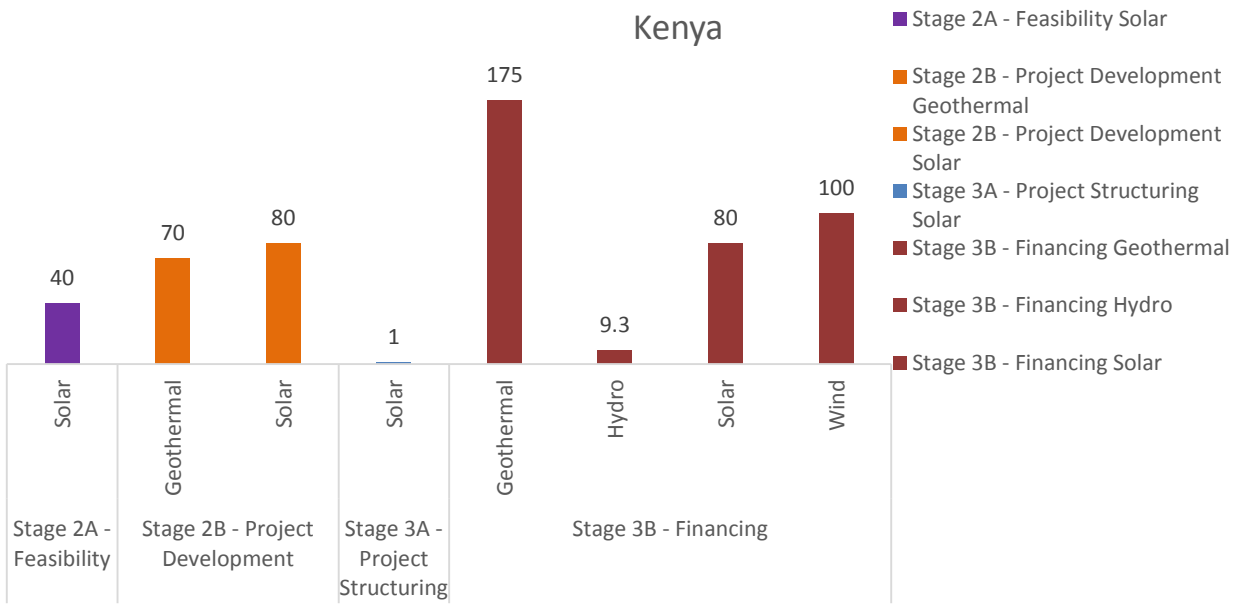
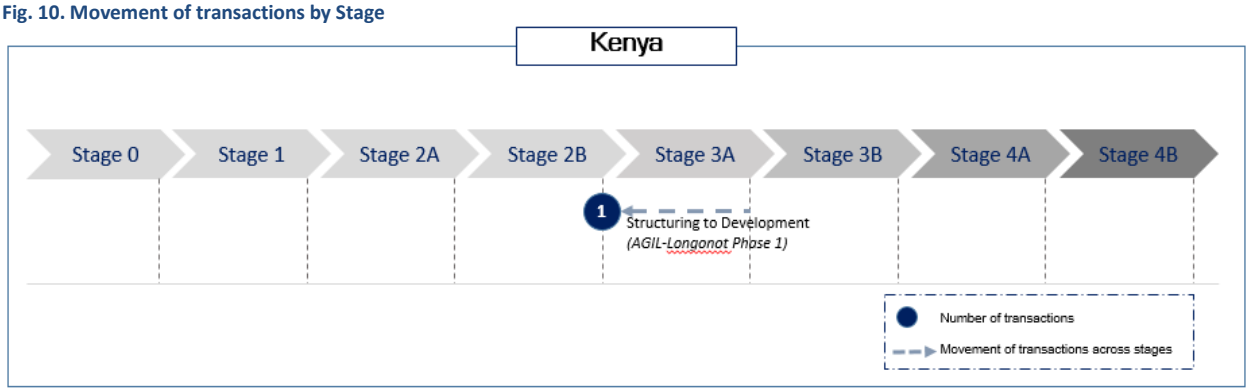


Fig. 10. Movement of transactions by Stage



[6] The PATRP Kenya Transaction Advisor left the program during the quarter, but a replacement was deployed in late June.

Table 7. List of generation transactions

Name	Stage--1, 2a, etc.	Technology--Wind, Solar, etc.	MW
Tindinyo--Hydro	Stage 3B - Financing	Hydro	1.5
Mutunguru Hydroelectric Co Ltd -- Hydro	Stage 3B - Financing	Hydro	7.8
Kesses I--Solar	Stage 3B - Financing	Solar	40
Menengai--Geothermal	Stage 3B - Financing	Geothermal	105
Rumuruti Kenergy--Solar	Stage 3B - Financing	Solar	40
Kipeto--Wind	Stage 3B - Financing	Wind	100
Akiira--Phase 1--Geothermal	Stage 3B - Financing	Geothermal	70
Powerhive--100 Solar micro-grids--Solar	Stage 3A - Project Structuring	Solar	1
Eldosol Energy--Solar	Stage 2B - Project Development	Solar	40
AGIL-Longonot Phase 1--Geothermal	Stage 2B - Project Development	Geothermal	70
Radiant Energy--Solar	Stage 2B - Project Development	Solar	40
Xago Kogelo (MSOF)--Solar	Stage 2A - Feasibility	Solar	40

Summary of PATRP's progress in Kenya during Q2 2016

Kipeto Wind Power Project. Following efforts by PATRP and the Kenya Power Africa team to resolve the allocation of transmission infrastructure risk under the project, the PPA was signed on June 2. The signing of the PPA paves the way for an application by the developer for a Government Letter of Support and tax exemption letter, and to provide Kenya Power with the requisite construction security for the transmission line.

PATRP's focus will now turn to ensuring completion of the transmission line and issuance of the letter of support in a timely manner so that financial close can be reached next quarter.

Rumuruti Solar Power Project. Finalizing arrangements for evacuating power remains a critical path item for reaching financial close on this transaction. During the siting and permitting of the 132kV Nanyuki-Rumuruti transmission line, the Kenya Civil Aviation Authority (KCAA), after consultation with the Ministry of Defense, had approved a revised design of the line and Ketraco had incorporated the changes. However, the Air Force subsequently objected to the line and requested that it be rerouted around Nanyuki Air Base, which will delay line completion and increase costs. PATRP advised USAID on a request for MoEP to mediate a solution that would not require a re-routing of the transmission line. A meeting of stakeholders took place on June 10, which gave rise to the option of placing 6-7 km of the line underground along the original route. This option is estimated by Ketraco to increase the cost by $15 million and extend construction timeline, but may have less impact on the project than the re-routing that had been requested by the Air Force. Thereafter, PATRP facilitated a meeting between the Presidential Delivery Unit (PDU), Kenergy and other stakeholders in late June, during which the PDU directed that the parties arrive at a mutually acceptable solution.

Akiira Geothermal Project. During the quarter, the developer continued in its drilling operations to find a commercial steam resource suitable for power generation.

In parallel, the Swedish International Development Cooperation Agency (SIDA), which is providing a guarantee to Standard Bank to provide debt financing for the project, has engaged a consortium of to undertake a study on the communities in the vicinity of the project – in Suswa and Raplands – and develop recommendations on the best way of engaging the communities that would result in inclusive growth. PATRP advised SIDA on the community engagement work that PATRP will be initiating in the next quarter and offered to explore opportunities for collaboration.

Kesses 1 – 40 MW Solar PV. PATRP participated in a conference call with the project developer, who briefed PATRP on the status of the PPA for the 40 MW solar PV project, which was initialed but has not yet been submitted to ERC. PATRP advised on the training and study tour that had been arranged for the Kenya Power PPA negotiating team on solar PV PPAs (as reported below). The developer had also prepared documents for application of the Government Letter of Support but will need MOEP/KPLC to forward the application to the PPP Unit. The debt financiers – DEG of Germany, FMO of Netherlands and Proparco of France – have given respective loan approvals subject to the approval of the PPA by ERC and issuing of the GLOS.

KenGen - Olkaria. During the quarter, PATRP deployed a Senior Geothermal Utility Advisor to KenGen who will initially focus on completing KenGen's immediate pipeline of projects, namely a competitive tender for Olkaria V as well as the rehabilitation of Olkaria I. Between existing and new projects, PATRP anticipates supporting KenGen with developing generation capacity of 1,300 MW and improving operational efficiency. PATRP will also support KenGen as it works towards its longer-term goal of adding 2,500 MW of new generation capacity by 2025.

Longonot Geothermal. The project has encountered challenges in connection with community engagement, and funding. In addition, the project has not yet secured a reliable water source for its needs. Regarding community engagement, PATRP is starting a series of interactions with them to firstly asses, and secondly, potentially advise on the most prudent engagement plan. They have an immediate funding need to conduct further exploratory drilling, in response to which PATRP has suggested ways to potentially fill this funding shortfall, including bringing in a strategic equity / co-developer partner. Owing to the aforementioned issues, the projected financial close is likely to slip and the project Stage has been adjusted in PATT accordingly.

Kenya Grid Management Support (GMSP). During the quarter, the Kenya-GMSP team delivered the final grid code to the ERC for its review and approval. This signaled the completion by PATRP of a lengthy and complex process, which was initiated in mid-2014 and has resulted in the development of a grid code that is in line with international best practices. The grid code was subsequently approved by ERC and submitted to the Ministry of Energy and Petroleum for consideration, and the commencement of the gazettement process, which is expected to involve the Attorney General's office and Parliament. The PATRP team continues to be available to support the ERC as they move through the grid code gazettement process.

Kenya Power Site Visit to South Africa. In light of the successful Renewable Energy Independent Power Producer Program (REIPPP) being implemented in South Africa, it was agreed to host a delegation from Kenya Power to visit two Solar PV IPPs in Kimberley, South Africa, and meet with the State Electric Utility (Eskom) and Herbert Smith Freehills in Johannesburg. The April 2016 site visit was also seen as an opportunity to explore the lessons learned from REIPPP (from both the off-taker's and IPP's points of view) and better understand how solar PVs has been integrated by Eskom. The trip was organized in conjunction with, and to complement the capacity building that PATRP had already performed in Kenya, namely: (i) a day-long workshop with Kenya Power on solar Power Purchase Agreements; and, (ii) additional day-long workshop with Kenya Power on contract compliance issues, including project monitoring, implementation, and enforcement. Photos from the site visit are below.

The Kenya Power delegation at the Scatec solar (Kalkbult) facility.

A Scatec manager explains how the washing of the panels works and how often they are cleaned. He also adds why a clean panel is likely to produce more energy than a dusty panel.

At Globaleq, the delegation learns how and where the IPP's energy is transferred to the grid.

The delegation learns how the inverter works to transform energy from AC to DC.

Small-Scale Renewable Energy (SSRE). PATRP is developing legal and regulatory solutions to address eventual integration of off-grid systems into the grid. In this direction, PATRP met with ERC and Kenya Power during the quarter to socialize the terms of reference for this work stream. Feedback was provided and subsequently integrated into the terms of reference. In Q3 (July – September) PATRP plans to collect feedback from mini-grid developers on six possible interconnection models. The output of this activity will include a draft of the interconnection terms and adding developers' rights to the current ERC's mini-grid license.

In response to a request for support, PATRP met with a Power Africa partner in connection with the development of new solar irrigation 'pay as you go' (PAYG) product. The Power Africa partner has partnered with the largest agricultural supplier in the country for this project to source the irrigation components and to distribute the systems with the current chain of agricultural stores across the country. The Power Africa partner is requesting due diligence support once they have the design more defined.

Another Power Africa partner is considering 1 to 2 MW hydro and biomass micro-grids that would sell to the community and to Kenya Power. OPIC has provided a grant to study 10 systems both in Kenya and Tanzania. These types of hydro systems are seasonal so they are also looking into solar and

biomass. The Power Africa partner is negotiating a support agreement with the DFID-funded REPP fund for early stage cost-sharing grant support on the projects. In parallel, PATRP has discussed areas of potential support, to include deployment of hydro expertise.

PATRP followed up with a micro-grid developer on its 10,000 connections project with 1-2 MW hydro-solar generation for a tea estate and surrounding communities. This project will be financed by the tea estate. The developer is also applying to the REPP fund managed by Camco. This is a Results Based Financed Fund continent wide. The developer requested due diligence support from PATRP in the following areas: hydro, and medium/high voltage grid. Further follow-up activity is expected next quarter.

Policy Interventions/Capacity building. During the quarter, and in line with the approved work plan, PATRP conducted a planning workshop with the Institute of Energy Studies and Research (IESR) at Kenya Power, to address curriculum development, staff and institutional capacity building, and development of an e-learning program and platform. The workshop was a beneficial event for all participating parties. For many of the participants this was the first time that they had an opportunity to interact with each other and collaborate on developing a program that would help IESR expand its training mission. As a result of the workshop, PATRP listed ten potential areas of ongoing support for the program proposed by IESR's leadership. These will be discussed in more detail with USAID/Kenya next quarter, to include follow-on activities.

Senior Energy Advisor. Based on a recruitment conducted during the quarter, PATRP recommended to USAID/Kenya a candidate to serve as the full-time Senior Energy Advisor & Power Africa Liaison (the 'Senior Energy Advisor') who will be responsible for providing high-level policy, legal, regulatory and strategy advice to the Cabinet Secretary for Energy and Petroleum and senior staff in the Ministry. The Senior Energy Advisor will also serve as a link between the Ministry of Energy and Petroleum and Power Africa in order to communicate and coordinate activities that relate to the advancement of the initiative's goals. We expect that the process will be completed next quarter.

Develop and Drive a Community Engagement Framework to Support IPPs. PATRP prepared a scope of work for this activity that was approved by USAID/Kenya during the quarter. The activity will be initiated next quarter with the following objectives:

- Identify the best methods for Power Africa project developers to provide communities with balanced and objective information on proposed projects and to obtain their feedback;
- Develop a model for developers to use for enhanced community participation and collaboration through the project lifecycle, including environmental mitigation and management;
- Develop strategies for developers to use to build strong and effective relationships with stakeholders including the communities, regulatory officials, local government officials and national government officials;
- Develop minimum standards/best practices for Power Africa projects in social and environmental engagement; and,
- Provide tools for effective resolution of community issues during project implementation.

LIBERIA

At present, PATRP supports Liberia's Power Africa program though frequent short-term technical assistance (STTA), focusing on the loss reduction initiative at the Liberia Electricity Company (LEC), and through specific large- or small-scale transactions. Moving forward, these activities will be continued in conjunction with the initiation of PATRP's support to the procurement of a new management contractor for LEC.

Summary of PATRP's progress in Liberia during Q2 2016

Loss Reduction Support to LEC. PATRP completed GIS mapping of a sample low-voltage (LV) feeder in Via Town for 170 customers, aggregated the collected information, and developed the LEC system map. The team also completed the LEC network model and conducted load flow studies to estimate the technical losses in the LEC network, and analyzed data on generation, billing, collection, and theft reduction to help estimate non-technical network losses. To build relevant internal capacity, a hands-on training was provided to LEC engineers in the planning department on network modeling and simulation studies.

This work stream will be completed early in third quarter and a final report presented, which will (i) characterize the sources of transmission and distribution losses; (ii) Identify technical loss sources; (iii) identify non-technical loss sources; and, (iv) develop a loss reduction investment and implementation plan.

The Liberia field team conducting a Geo-referencing exercise.

ArcGIS® training

Management Services Contractor for LEC. The PATRP team held a kick-off meeting in May with the Board of the Liberia Electricity Company (LEC) and other stakeholders to commence their advisory support for procurement of a management services contractor (MSC) for LEC. During the remainder of the quarter, PATRP conducted due diligence activities in support of the tendering process. The main purpose of this phase is to: (i) undertake a detailed technical, legal and financial due diligence of LEC using existing data and limited additional investigations; (ii) undertake a market sounding of potential management contractors; (iii); analyze contract options and present a recommended draft contract; and (iv) facilitate workshop(s) to review the findings with stakeholders (including GoL, LEC, and donors) to obtain final comments on the contracting process prior to proceeding to the next phase. Some of PATRP's initial findings were recorded in the Inception Report submitted to USAID/Liberia during the quarter.

Moving forward, it is anticipated that a request for qualifications will be issued during the third quarter in order to pre-qualify bidders, followed by publication of the request for proposals in October.

Pursuing New Generation Capacity. At the request of the Ministry of Lands, Mines, and Energy (MLM&E), PATRP continued to explore ways of utilizing some of the 104 MW HFO generation that is currently owned by a mining company. In this direction, PATRP produced an outline memorandum of understanding, which would establish a framework for cooperation between the mining company and MLME, and advance utilization of the aforementioned generation. The document was shared with USAID/Liberia, and thereafter with the mining company and the MLM&E in late May, and is awaiting feedback as at the end of the quarter.

PATRP was approached in May by an IPP interested in developing a 17 MW biomass fueled power project. The proposed project is revival of a project proposed in 2009-2010 but was abandoned. PATRP will work with MLM&E and conduct due diligence on the project and if viable, recommend next steps for financial closure and project implementation.

NIGERIA

PATRP provides transaction advisory support to approximately 20 generation projects, spread across the project cycle. The total planned installed capacity of these generation projects amounts to over 4,000 MW. These projects primarily consist of wind and natural gas generation. PATRP is also currently assisting the Transmission Company of Nigeria (TCN) by providing a full time technical advisor, supported by financial, legal/regulatory and subject matter experts who contribute on an as-needed basis. Further, PATRP has established an ongoing work stream for helping TCN implement its capital program, and this work stream will continue in 2016. As part of the new or expanded activities set forth in the supplemental scope of work finalized in Q1, PATRP has increase its level of support in Nigeria through the engagement of new staff, including a Lead Transaction Advisor, a Resident Gas Sector Advisor, and nine Resident Distribution Advisors providing turnaround assistance to three distribution companies.

The following figures and graphs show the composition of PATRP's Nigeria active transactions by stage, and how they have advanced through the project cycle.

Fig. 11 Breakdown of transactions

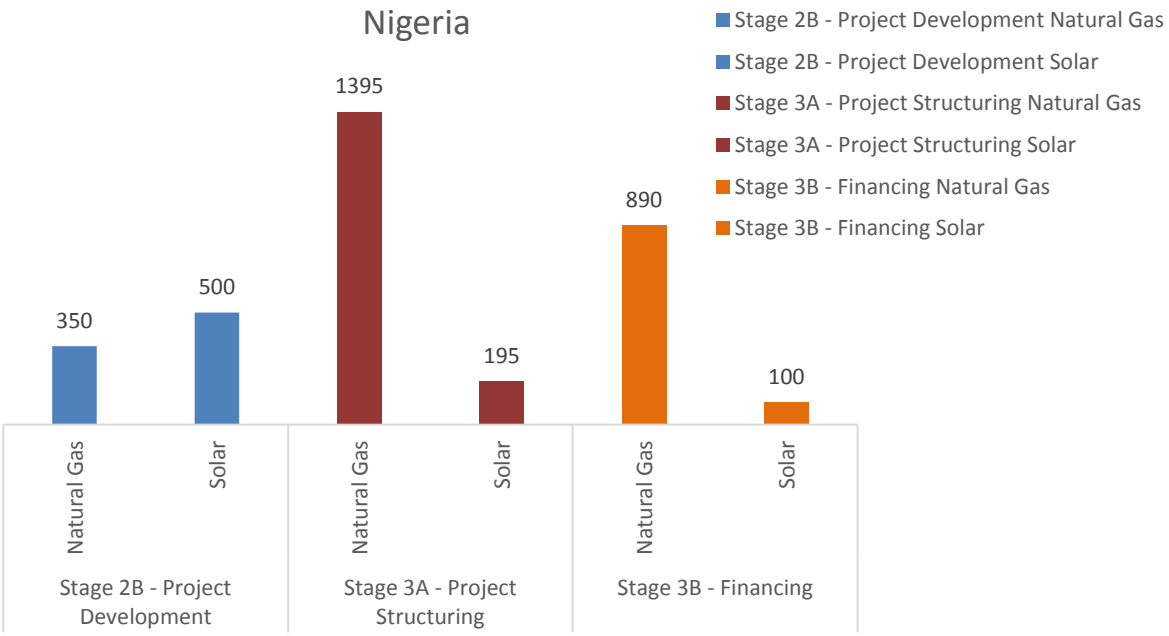


Table 8. List of generation transactions

Name	Stage--1, 2a, etc.	Technology--Wind, Solar, etc.	MW
Qua Iboe (QIPP)--Gas	Stage 3B - Financing	Natural Gas	540
Nigeria Solar Capital--Solar	Stage 3B - Financing	Solar	100
Afam Power--Gas	Stage 3B - Financing	Natural Gas	350
Abiba Solar / Quaint--Solar	Stage 3A - Project Structuring	Solar	50
OMA Power--Gas	Stage 3A - Project Structuring	Natural Gas	500
Proton Delta Sunrise--Gas	Stage 3A - Project Structuring	Natural Gas	150
Ikot Abasi Power--Gas	Stage 3A - Project Structuring	Natural Gas	250
Century Power--Gas	Stage 3A - Project Structuring	Natural Gas	495
Pan Africa Solar--	Stage 3A - Project Structuring	Solar	75
Panyam Solar--	Stage 3A - Project Structuring	Solar	70
Yellowstone IPP--Gas	Stage 2B - Project Development	Natural Gas	350
LR Group--Solar	Stage 2B - Project Development	Solar	100
Rook Solar Investment--Solar	Stage 2B - Project Development	Solar	100
DuSable Capital / Motir--Solar	Stage 2B - Project Development	Solar	100
Green Cowrie Energy Limited--Solar	Stage 2B - Project Development	Solar	100
Nova Solar Power--Solar	Stage 2B - Project Development	Solar	100

Summary of PATRP's progress in Nigeria during Q2 2016

Solar front-runner projects. At the end of the quarter, the Permanent Secretary of the Ministry of Power, Works and Housing (MoPWH) authorized NBET to proceed with initialing PPAs with the front-runner solar projects, which resulted in 14 PPAs being initialed totaling over 1,000 MW of utility-scale solar. This represents a significant milestone for Power Africa and follows months of support from the Power Africa/PATRP team, with the following specific actions undertaken in Q2:

- Through its presence in the Advisory Power Team, PATRP was able to brief and advise the Vice President on the merits of solar power project development in Nigeria.
- PATRP prepared a list of issues that had been discussed, but left unresolved, in the template solar PPA, most notably the failure to address the possibility of unavailability of USD to exchange for Naira payments, the need to more specifically address the allocation of local political force majeure risks, resolution of the transmission losses (if any) to be charged to solar plants, control over refinancing required due to adverse circumstances (debt events), and clarification of the process of proceeding from an initialed/signed agreed form of PPA to a fully effective document. These issues were ultimately resolved and paved the way for initialing of PPAs by 14 developers.
- PATRP legal transaction advisors analyzed final revisions on the draft form of the PCOA and submitted comments to NBET and external legal counsel to NBET. Pending signature of the PPAs, the PCOA will be the next agreement that will require approval by the Ministry of Finance.
- NBET sent out letters of invitations on behalf of the Minister of Power, Works and Housing to the solar 15 front-runner IPPs for a meeting with the Ministry of Power to discuss the solar power transactions. The Minister commented that the Government of Nigeria would not be able to accept the tariff on the solar power contracts at the existing proposed tariff. At the conclusion of the meeting, the Minister suggested to the developers that they caucus and pursue one of three options: (i) a willing buyer willing seller agreement with an off taker (either a DISCO or a state) willing to pay the tariff on the PPA; (ii) a new tariff to be proposed by the developers that is lower than the current PPA tariff; or (iii) a competitive bidding process. In this context, PATRP produced a tariff study which was circulated to the USAID Mission and NBET, which discussed tariff benchmarks for solar generation in Nigeria.

Qua Iboe Power Project (QIPP)—gas—540 MW. The transaction continues to move forward; however, progress slowed during the quarter owing to competing demands on NBET's attention. NBET, with support from external counsel and PATRP, is close to finalizing the PPA and PCOA. In this respect, while there are a number of open issues under the PCOA, they are not considered insurmountable. Discussion of key outstanding issues on the QIPP gas supply agreement (GSA) has also been delayed.

Gas-to-Power Strategy. The newly deployed PATRP Gas Transaction Advisor held a series of "Opportunity Identification Sessions", in collaboration with USTDA and IFC, with eight gas asset owners to identify specific transactions which would be ideal candidates for PATRP assistance. Among the eight, six specific opportunities were identified and will be further developed. The "Opportunity Identification Sessions" will form the basis for the Gas Sector Rapid Assessment, which will be conducted at the end of July.

Unlocking Stranded Gas. As part of the process of unlocking generation stranded by gas constraints, the Vice President's Advisory Power Team led by PATRP's Embedded Advisor has been monitoring the repair (by NNPC/Nigerian gas Company) of the vandalized Escravos-Lagos Pipeline System (ELPS A pipeline). The repair has now been completed. Pre-commissioning activities are ongoing. The ELPS pipeline supplies gas to many power plants in the Western Delta up to Lagos.

Transmission System Investments. At the request of the TCN Managing Director, Transmission Services Provider, PATRP is assisting with preparations for the competitive procurement of an initial set of contractor-financed transmission projects, amounting to $200M, including modifying the World Bank template bidding documents for procurement of works, and developing the bidder eligibility criteria and bid scoring system. TCN is anxious to expedite issuance of the pilot RFP within a few months. To this end, the critical path items are completing the technical appendices to the bid documents showing the scope of works, bill of quantities and technical specifications for the contract lots, and the timing for obtaining TCN management and Ministry approvals. These will depend on actions being taken by TCN engineering and management personnel.

Unlocking and Evacuating Power. PATRP, working with the Vice President's Advisory Power Team, continues to monitor existing transmission operations and new transmission projects with a focus on unlocking generation up to 7000 MW plan in the near term. This week the Advisory Power Team succeeded in resolving the right of way issues for two critical transmission projects – the Alaoji-IkotEkpene transmission line project and the IkotEkpene-Calabar transmission line project.

Market Stabilization Fund. TCN has confirmed that CBN is preparing to disburse the long delayed next tranche of the market stabilization fund. TCN's share amounts to 15.9 billion Naira ($65 million USD). PATRP is assisting TCN management with prioritizing the use of this allocation and has suggested that some of the funds should go to provide stopgap funding for five ongoing projects that will address bottlenecks for evacuating power from existing generating stations.

Tariff Review. NERC initiated consultations with TCN on the biannual minor tariff review. Although characterized as a "minor" review, if NERC follows its own rules this minor review will result in a significant increase in the unit rate tariffs for transmission and distribution, because the forecasted quantities of wheeled energy used to set the rates that went into effect in February 2016 were too high, resulting in tariffs that are too low. PATRP is leading the preparation of TCN's filing for the minor tariff review, and in Q2 completed a spreadsheet analysis of the required changes to the transmission tariff, prepared TCN's submission and covering letter to NERC and delivered all of these to TCN.

Distribution Company Commercial Turnaround Support. In mid-May PATRP began its assistance to three distribution companies (DISCOs) to support loss reduction and performance improvement: Abuja Electricity Distribution Company (AEDC), Benin Electricity Distribution Company (BEDC), and Eko Electricity Distribution Company (EKEDC). The assistance will be primarily delivered through PATRP field-based advisors, embedded within the DISCOs. Nine of these advisors were deployed during the quarter. To mark the commencement of this work stream, PATRP concluded MOUs with each of the DISCOs at a signing ceremony, which took place on May 23, in Abuja (photos below).

At AEDC, it was agreed that the PATRP would focus its efforts initially in the 'FCT South' region. The region has five business units including Apo, Lugbe, Gwagwalada, Jabi and Kuje, and represents a total of 141,000 customers, or about 18% of the total reported AEDC customer base. At BEDC. It was agreed that the team will focus it support in the following business units: Ugbowo, Ipkoba-Hill and Evboutobu. Collectively these business units have over 136,000 customers or about 18% of the total reported BEDC customer base. Finally, at EKEDC It was agreed that the team will focus its efforts in two districts, namely Mushin and Apapa, which comprise 84,000 and 43,000 customers respectively, and represent about 30% of EKEDC's customer base. Accumulated Technical and Commercial losses in all of the respective 'pilot' areas mentioned are in excess of 45%. In each DISCO, the PATRP teams held meetings with management and functional heads to gain a general understanding of their business processes; collect data on the detailed organizational structure, each unit's functions, performance, metering, customer database, network schemes, business process mapping, energy balance, billing and collection, IT applications, and assets.

Nigerian news coverage of the MOU signing.

Working with employees in the field at AEDC

Off-Grid/Small-Scale Renewable Energy (SSRE). In Q2, PATRP held meetings with multiple developers, lenders, BTG partners, and the Vice President's Office. Recurring themes from these meetings were the barriers to wider small-scale solar adoption, including difficulties obtaining foreign currency, logistical difficulties and costs of importing solar systems, lack of awareness and perception of solar systems by Nigerian people due to poor quality systems and failed public installations, and lack of finance at viable rates and terms (under 10%, less than 50% collateral requirements, and local currency).

PATRP's BTG advisor in Nigeria continued the refinement and execution of the BTG Nigeria FY 2016 Work Plan by completing drafts of four SOW's for main activities and developing an outline of a market assessment desk study and a template for assessing the Business Capacity of Off-Grid Energy Company in Nigeria.

Policy. In Q2, PATRP's Policy and Institutional Advisor submitted the next draft of the Nigeria CBN Report to the Nigeria Mission, and is currently awaiting comments on this draft. The draft report assesses the impact of the Central Bank of Nigeria's August 2015 Foreign Exchange Circular on US Dollar liquidity and the ultimate effect this Circular has on the growth and development of the power sector in Nigeria.

TANZANIA

PATRP maintains a resident Transaction Advisor in Tanzania, who is based in the Investment Division of TANESCO. PATRP has also deployed a resident project manager to oversee the establishment and institutional development of an independent transmission system organization. PATRP also retains a small-scale renewable transaction advisor, who is embedded within the Rural Energy Agency of Tanzania. As part of the expanded activities set forth in the supplemental scope of work finalized in Q1, PATRP engaged a new Legal Advisor for Tanzania in Q2.

The following figures show the composition of active Tanzanian transactions (that have not yet reached financial close) by stage, and how they have advanced through the project cycle. We have also listed a number of proposed transactions that are currently being vetted by PATRP's Tanzania team.

Fig. 12. Breakdown of transactions

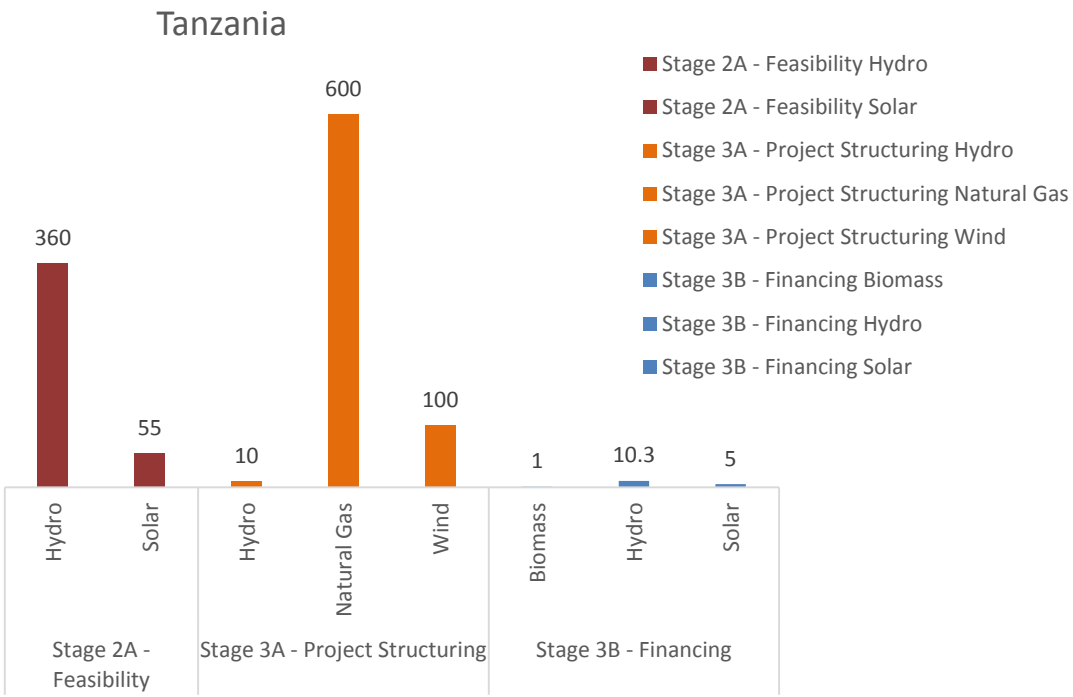


Table 9. List of generation transactions

Name	Stage--1, 2a, etc.	Technology--Wind, Solar, etc.	MW
Benedictine Sisters of St. Gertrud Convent / Lupali 317 kW small hydro project--Hydro	Stage 3B - Financing	Hydro	0.3
Husk Power--Biomass	Stage 3B - Financing	Biomass	1
Kiwira River (East Africa Power Limited)--Hydro	Stage 3B - Financing	Hydro	10
NextGen / Kigoma--Solar	Stage 3B - Financing	Solar	5
Mapembasi / Njombe--Hydro	Stage 3A - Project Structuring	Hydro	10
Aldwych Singida Wind--	Stage 3A - Project Structuring	Wind	100
Kinyerezi III--Gas	Stage 3A - Project Structuring	Natural Gas	600
University of Dodoma 55 MW--Solar	Stage 2A - Feasibility	Solar	55
Ruhudji--Hydro	Stage 2A - Feasibility	Hydro	360

Table 9b. List of Proposed generation transactions

Name	Stage--1, 2a, etc.	Technology--Wind, Solar, etc.	MW
Isigula 407 kW small hydro project--Hydro	Stage 3A - Project Structuring	Hydro	0.407
Luganga Hydro--	Stage 1 - Pre-Feasibility	Hydro	2.8
Nakatuta 10 MW small hydro project	Stage 2B - Project Development	Hydro	10
Ijangala 360 kW small hydro project--Hydro	Stage 2B - Project Development	Hydro	0.36
Kinyerezi IV--Gas	Stage 2A - Feasibility	Natural Gas	500
Kilwa I--Gas	Stage 4A - Conditions Precedent	Natural Gas	320
Kinyerezi II--Gas	Stage 3B - Financing	Natural Gas	240
Kilwa II--Gas	Stage 3B - Financing	Natural Gas	300
Kinyerezi I (Expansion)--Gas	Stage 3B - Financing	Natural Gas	186
Rumakariya HPP--Hydro	Stage 1 - Pre-Feasibility	Solar	500
Makambako--Wind	Stage 3A - Project Structuring	Wind	100
Kusini Mtwara--Gas Expansion	Stage 3A - Project Structuring	Natural Gas	200
Kanono--Hydro	Stage 3A - Project Structuring	Hydro	87
Nsongesi--Hydro	Stage 1 - Pre-Feasibility	Hydro	48
Malagarasi--Hydro	Stage 3B - Financing	Hydro	41
Kakono HPP--Hydro	Stage 3B - Financing	Hydro	87
Shinyanga 150 MW--Solar	Stage 3A - Project Structuring	Solar	150

Summary of PATRP's progress in Tanzania during Q2 2016

Kinyerezi III Gas (245 MW). Kinyerezi III has previously been identified as a 600 MW, USD780 million, combined-cycle power plant, but the current scope is for 245 MW of simple cycle generation (2 units), with an as-built capital cost estimate of USD340 million, with pricing subject to EPC tendering and available lending terms. The TANESCO negotiating team has proposed that this requirement be replaced by a directed gas supply agreement between Kinyerezi III and Tanzania Petroleum Development Corporation (TPDC). It appears that this solution is acceptable to the sponsors. Against this background, PATRP legal advisor prepared a memorandum, requested by TANESCO management, comparing "standard PPA" fuel provisions to contracts incorporating a "tolling" approach. A tolling agreement is essentially a processing agreement for the conversion of an input product for a fee. In the energy sector, tolling agreements are contracts where one party – the toller – provides a company with one form of fuel to be converted into another form of fuel on their behalf. However, the tolling approach has subsequently been withdrawn from consideration.

Kinyerezi IV Gas (500 MW). PATRP provided input on the draft Joint Venture Agreement (between TANESCO and the developer) to ensure an appropriate allocation of risk. We are awaiting feedback from TANESCO on these comments.

Masigira HPP (70 MW). PATRP reviewed the draft PPA early in the quarter; however, PPA negotiations subsequently stalled as the review of the financial model uncovered high capital costs, some of which were ineligible by national policy for inclusion. Most concerns related to the level of CAPEX, but also the project development costs which are considered to be extraordinarily high. Sponsors were asked to reconsider and adjust their model to acceptable levels.

PPA Templates. Given the delays in the PPA negotiations for Masigira HPP and perhaps Kinyerezi III, PATRP legal advisor began reviewing the PPA model agreements, with the objective of improving them. As has been reported previously, the PPA model agreements need to be refined as, in their present state, they are not adequate. The strategy will be to prepare a complete package of key documents for TANESCO's use (PPA, IA, and perhaps an example of a Direct Agreement to be entered into with the government).

Dodoma Solar (50-155 MW). Terms of reference for external advisors for this project, which may be supported by the World Bank as a PPP, was developed by PATRP. These have subsequently been submitted to the World Bank for review. The project includes the installation of a Solar Measurement

and Monitoring System at the Solar Park, the intent being to more precisely measure solar irradiance on site and arrive at an optimum size of the solar power generation plant. World Bank will support the recruiting of a technical team to recommend the selection of the Solar Measurement/Monitoring System and subsequently conduct the feasibility study for the proposed plant. The term of the contract has been estimated between 22-26 months.

Somanga Fungu Gas Fired PPP (300 MW). This Project was previously referred to as Mkuranga-Kilwa II but has undergone a name change to Somanga Fungu gas-fired plant. The World Bank has extended technical assistance to the Project by underwriting the financial expenses associated with the contracting of K&M Advisors. As of now, the advisors have completed the Inception Report and it has been accepted by government. The project is slated to be tendered in August 2016.

Kakono HPP (87 MW). Notwithstanding the value for money analysis developed by PATRP, TANESCO management has decided that this project will be developed as a TANESCO-owned project, rather than a PPP. Although the project is not large at 87 MW, it has very strong export potential. It can also service the mines located in the Northwest portion of the country, which may result in an overall improvement in the creditworthiness of the TANESCO customer base. PATRP's hydro expert has also undertaken a preliminary assessment of the project and provided feedback to USAID/Tanzania.

Kiwira small hydro project (10 MW). This project was scheduled to go through lender review in June, but has been delayed until July. In Q3, it is expected that Finance Documents, Insurance, Legal Agreements, Environmental Management Plan and associated reports will be drafted. Once all agreements and reports are produced, the plan is to go to the lender's credit committee by the first week of September. Also, the lender is now looking to obtain coverage from one of the three US-based insurance firms recommended by OPIC.

Mapembasi small hydro project (10 MW). The Export–Import Bank of the United States (EXIM) issued the draft Information Memo in Q2, which PATRP reviewed. PATRP emphasized the importance of closing the deal by September 30 in order to maintain the DCA portable guarantee but this seems unlikely. PATRP also discussed the project with a potential equity partner, an Italian industrial investor, regarding the possibility of investing in Mapembasi and possibly two additional projects in Tanzania.

Lupali small hydro project (317 kW). The project was scheduled to undergo final approvals by the lender's credit committee in Q2. However, additional information requested by the bank has not been submitted delaying bank loan final approvals. One of the key requested information/documents required included a Letter of Intent (LOI) from TANESCO. Even though the project will be supplying the generated power to their mini-grid, they also lodged their application to TANESCO expressing their desire to embed their generating plant described above for interconnection to the TANESCO distribution network. PATRP followed up with TANESCO on the LOI and has also requested the assistance of the REA Director General to follow up with TANESCO senior management so that the issue can be expedited.

Credit Line facility under Tanzania Energy Development and Access Project (TEDAP). Nearly USD18 million of funds remain under the World Bank-sponsored TEDAP Credit Line facility. If these funds are not used by September 30, they will be forfeited. Since 10 MW Kiwira project executed a revised Standardized PPA tariff under the second generation Small Power Producers framework with a USD-based tariff, the project will source financing from the lender/Stanbic in USD as well. Therefore, the project is no longer able to refinance the loan through the credit line facility. The current credit line facility operating guidelines only allows on-lending in TZS. REA and World Bank have agreed to expedite the changes to the credit line operating guidelines so that dollar refinancing can take place under both TEDAP and the new Tanzania Rural Electrification Expansion Project (TREEP). Changing the TEDAP guidelines now will require simply an agreement between REA and the World Bank, which

will also facilitate the transition to TREEP. Other SPPs nearing financial close that could potentially access the credit line facility include Lupali, Isigula and Ijangala Projects.

PATRP worked with the team at REA and the World Bank to prepare a technical document with proposed changes to the Credit Line Facility to allow refinancing in local currency, USD or both. The team also prepared a new methodology that will be used to calculate the on-lending interest rate under this facility. PATRP TA presented the proposal to the Credit Line Technical Committee and awaits approvals from the Credit Line Steering Committee and a "No Objection" from the World Bank.

TANESCO TSO Support. PATRP continued to implement the approved work plan, which is intended to support the restructuring of TANESCO within the framework of implementing the Tanzania Electricity Supply Industry Reform Strategy and Roadmap. PATRP is supporting the establishment and institutional development of an independent transmission system operator (TSO).

The TANESCO-TSO team completed the PSS/E Load Flow Modelling training/workshop, devoted to know-how transfer and building modelling capacity within TANESCO Operations and Planning Divisions. Out of 12 invitees, 10 attended every training session, which took place June 13-17, 2016. PATRP received very positive feedback on training content and methodology.

The TANESCO-TSO team also prepared and presented (in separate meetings) the proposed TSO organization structure to the TANESCO Managing Director, the Deputy Managing Director (DMD) for Transmission, 14 managers and engineers from TANESCO's transmission and dispatch department, and the manager of the National Dispatch Center. The Managing Director indicated that they are in the process of reorganizing transmission and indicated that they would appreciate receiving the final structure for consideration and implementation. The DMD indicated that he was very pleased with the proposal and the content of what is proposed.

Policy. Also in Q2, the Policy Advisor assisted the Tanzania Mission with preparation for a June workshop with TANESCO and MEM on power procurement options/best practice and other associated topics. Support included developing a presentation on competitive procurement/reverse auctions, creating the workshop agenda and related materials, and interfacing with presenters on what their presentations should cover. The Policy Advisor then participated in the workshop and delivered a presentation on reverse auctions. Photos below.

Attentive delegates from the Government of Tanzania listening to international best practice on competitive procurement of power, at the workshop facilitated by USAID and PATRP.

PATRP advisor Professor Anton Eberhard shares with delegates Uganda's experience with implementation of their GetFit renewable energy procurement program.

EAST AFRICA REGION[7]

PATRP deployed a new resident Transaction Advisor to Rwanda in Q2 as part of the expanded activities set forth in the supplemental scope of work agreed to in Q1. PATRP also maintains a Technical Advisor who is resident in Kigali, Rwanda and covers the East Africa region, with a particular focus on transmission interconnections projects being advanced by the Nile Equatorial Lakes Subsidiary Action Program (NELSAP). Similarly, PATRP is also supporting the Eastern Africa Power Pool (EAPP) as it looks to build a robust regional power-trading platform, with a specific focus on operationalizing the Ethiopia-Kenya-Tanzania interconnector (EKT).

As mentioned in the Kenya section, PATRP also engaged a Part-time Geothermal Advisor in Q2, based in Nairobi, who will support Power Africa's geothermal program in the region, and provide technical assistance on existing geothermal transactions.

Summary of PATRP's progress in East Africa during Q2 2016

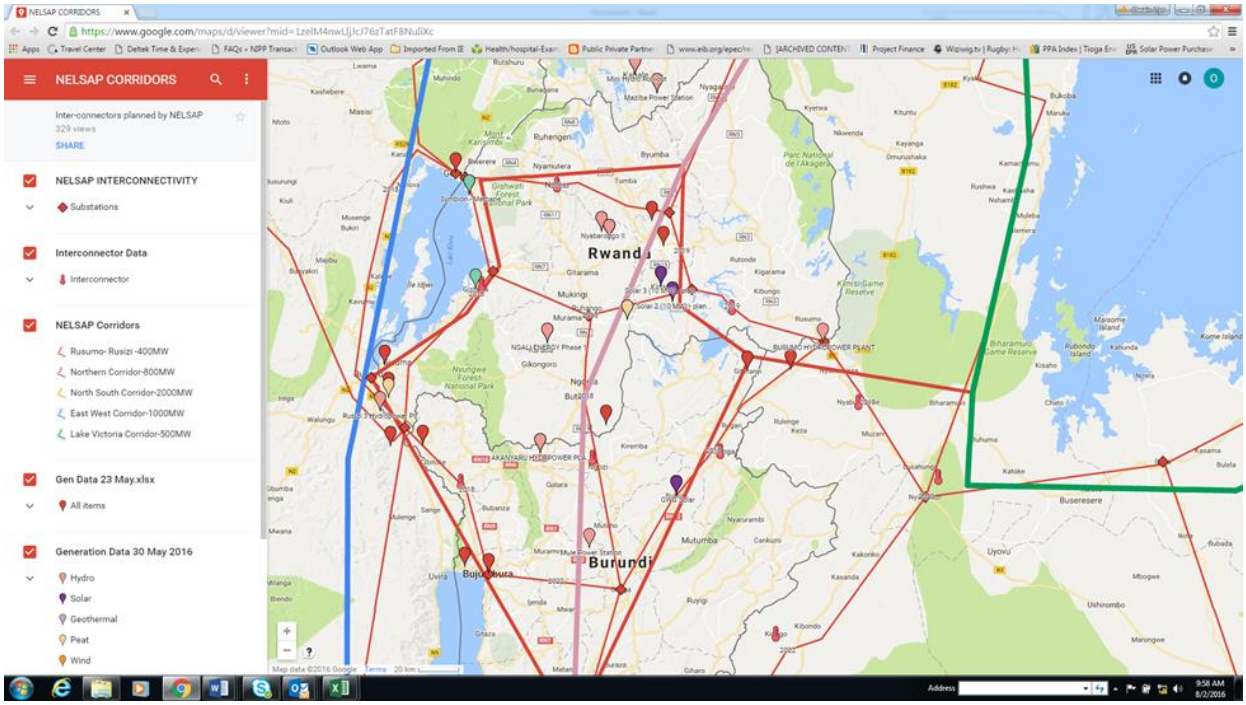
Ethiopia-Kenya-Tanzania-Zambia (EKTZ) interconnector. A feasibility study funded by NELSAP on the EKTZ interconnector (specifically the Tanzania - Zambia portion), is entering its final options stage. PATRP identified shortfalls in the regional focus of the study and encouraged the consultants undertaking the work to allow for maximum North-South trade as opposed to simply balancing trade between the two countries. The countries agreed that the consultants should revise the configuration of the lines to take into account the agreed transfer capacity of 10,000 MW at commissioning and 2,000 MW at the next phase and submit these by June 2016 for approval.

EAPP Interconnection Code Compliance Program. PATRP's focus during the quarter was supporting USAID and another implementing partner in providing the necessary guidance to utility representatives to enable successful implementation of the EAPP Interconnection Code Compliance Program. The roll-out of the Compliance Program began last quarter, and is intended to ensure reliable interconnected power system operation. PATRP supported the development of a package of materials to assist entities for conducting a self-assessment of compliance standards and developing mitigation plans to close any gaps.

Nile Equatorial Lakes Subsidiary Action Program (NELSAP). NELSAP, in collaboration with the Infrastructure Consortium for Africa (ICA) of the AfDB, hosted the first NELSAP Investment Project Conference in Nairobi on the June 2. PATRP played a pivotal role in preparing material and presentations to garnish investor interest in the regional asset creation program. The material prepared for the event will be used for further promotional events and one on one presentations. NELSAP indicated that Power Africa's convening power should be utilized to enhance Development Partner awareness in the asset creation programs driven by NELSAP. In particular, the lack of bankable projects with prepared feasibility studies, was highlighted as a major constraint. NELSAP is now looking at the creation of a revolving fund, particularly ring fenced to fund Feasibility studies. The AfDB indicated their support for such an initiative and the matter will be discussed further with PATRP next quarter.

Infrastructure and interconnectors maps. To complement its support to the development of infrastructure and interconnectors in the region, PATRP has developed a Google Map list of current or future projects. In the next quarter, PATRP will explore if and how this resource can be linked with the PATT database.

[7] For the purposes of this report, activities performed in Rwanda are listed under East Africa regional activities; however, moving forward they will be presented as stand-alone activities under a new Rwanda country section.



Screenshot of the Google maps – regional infrastructure

Rwanda. As mentioned above, PATRP deployed a new resident Transaction Advisor to Rwanda in late May. Since her deployment, she has been identifying opportunities for PATRP engagement. In this context, Rwanda's current installed capacity of approximately 122 MW meets its present demand, and it appears that the Government of Rwanda's policy is leaning towards off-grid solutions in lieu of expansion of the grid. Therefore, as part of her activities the Transaction Advisor is reviewing whether there is sufficient demand to meet the anticipated generation over the next several years, and begin assistance to the Government of Rwanda on both its generation planning and development of a strategy for offtake of excess supply.

Specific activities included:

- **Energy Development Corporation (EDCL).** Provided template performance guarantee to EDCL to be used by IPPs, which is a conditions precedent for several PPAs. The agreed template will expedite the financial close process. She also met with EDCL to discuss her comments to the PPA for a liquid fuel oil generator, which needs to be on-line by January 2017 in order to bridge short-term gap in supply in 2017-2019; and also reviewed the PPA for Karambo mini HPP. She is proposing that these projects, along with several other mini hydro plants receive PATRP support. The level of PATRP support will be discussed with USAID/Rwanda together with the general pipeline of generation projects early next quarter.
- **PPP Implementation**. Advised EDCL on implementation of new PPP law in light of energy projects in the pipeline and drafted letter to the Rwanda Development Board requesting clarification on how the law affects pipeline projects.
- **DCA.** Met with two local financial institutions to discuss involvement in the DCA loan guarantee program. Connected one interested institution to the DCA team.
- **Rural Electrification Strategy.** Held a meeting with Ministry of Infrastructure and EDCL to discuss the implementation plan for the solar home system voucher scheme, which is program 1 of the Governments' Rural Electrification Strategy. There may be opportunity for PATRP/Power Africa engagement in the development of the voucher mechanism, procurement documents and grant agreement.
- **Ruzizi III HPP (145 MW, of which Rwanda has agreed to purchase 45 MW).** Met with Energie des Grands Lacs (EGL), the regional operator of Ruzizi HPP, to discuss how Power Africa might support

development of Ruzizi III. Various options were provided by EGL, which must now be discussed with USAID/Rwanda.

PATRP is also focusing on Rwanda's ability to effectively evacuate the new power it has contracted. To this end, the transmission system is undergoing rapid changes in configuration due to various internal and regional reconfigurations being imposed in the national system. The commissioning of fairly large power plants, like Nyabarongo 1 (28 MW) and Kivuwatt Ph 1 (25 MW) have caused certain of the older 110kV lines to overload. Simultaneously, the NELSAP 220kV lines crossing the country towards the DRC, Burundi, and Tanzania will also interconnect with the Rusumo and Ruzizi power plants are under various stages of construction and provide challenges during the reconfiguration. Constraints are currently being experienced dispatching power from the Western power plants towards Kigali, forcing the utility to run expensive thermal plants whilst more affordable generation plants are not producing to capacity. To address these challenges, PATRP deployed a transmission expert to Rwanda at the end of the quarter to initiate a work stream that will focus on the following three elements:

- Assist the Energy Utility Corporation Limited (EUCL) on development of system operational planning and dispatch processes, relevant operating rules and procedures.
- Assist EUCL in developing a systematic approach and a system and processes investment plan for adequate system operational planning and dispatch; and,
- Provide relevant trainings and capacity building for the planning and operations personnel of EUCL.

Follow-up activities on this work stream are expected in Q3.

Regional Off-Grid/Small-scale. A new regional BTG advisor for East Africa was introduced in Q2, and work plans for Kenya and Tanzania are in development, including a framework on connecting micro-grids to the main grid in Kenya. The new advisor also participated in a number of conferences, including the ESMAP Mini grids Conference and the GOGLA Annual Meeting, both in Nairobi, with several bilateral meetings held at each event.

Uganda. PATRP advisors deployed to Uganda during the quarter to explore opportunities for supporting the following projects:

- Mayuge Sugar Industries (23 MW);
- Nyamabuye HPP (7 MW);
- Nyabahuka-Mujunju project HPP (3.2 MW); and,
- Four small HPP projects: Kakaka (5 MW), Lubilia (5.4 MW), Nyamagasani II (5 MW), Siti I and II (21.5 MW).

Further, PATRP conducted a series of site visits to assess the feasibility of some of the hydro projects presented, to include:

- Attending two meetings with an electricity company to review bid documents, hydrological data, geotechnical data, PPA, the financial model, the ESIA, and the feasibility study. The PATRP advisors provided enhanced terms of reference for an owner's engineer, and committed to progressing the development of their business plan and financial model with new drafts.
- After conducting site-visit, attending follow-up meeting with a hydro developer interested in retaining PATRP support in ongoing technical discussions regarding system design, particularly regarding the use of GRP tubing as an alternative to an open channel canal for water conveyance. Support going forward will include independent technical input, technical advice in discussions with bank engineers, introductions to material suppliers, and introductions to equity partners.

Additionally, a conference call was held with a developer about an anticipated 1 MW solar project for WENRECo. The project is in an early stage, and still needs a feasibility study, tariff analysis and financial model. PATRP can begin to support by helping with a TOR for a feasibility study, and performing HOMER modeling to help size the system (given demand and operating data from the existing plants).

Reviewing gage data for the Kaku River. Read twice daily, these river gages provide the hydrology data critical to a bankable hydropower project.

Following the canal's path. Once completed, the project will divert a portion of the river's flow to a powerhouse nearly 2 km downstream.

SOUTHERN AFRICA REGION[8]

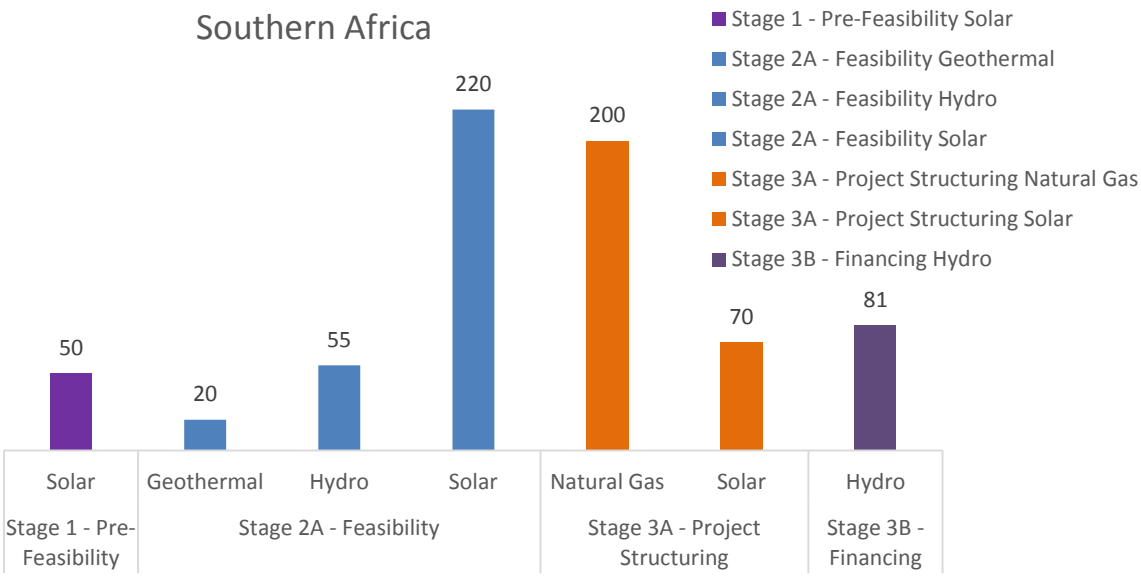
In Q2, PATRP engaged a second Regional Transaction Advisor for Southern Africa, who was added to the team as part of the new or expanded activities set forth in the supplemental scope of work. Moving forward, PATRP will also look to deploy resident Transaction Advisors in Angola, Zambia and Malawi. To this end, candidates for both the Malawi and Angola positions have been identified and selection will be completed next quarter. Candidates for the embedded role within ZESCO will be considered next quarter, and PATRP will await further guidance from USAID/Zambia on deployment of a second Zambia advisor, who will be working with the Ministry of Energy and Water Development.

PATRP also has a Transaction Advisor embedded within the Africa Union's New Partnership for Africa's Development (NEPAD), who is tasked with accelerating the development and implementation of the Africa Power Vision energy projects.

The transactions mentioned below span several countries, including Zambia, South Africa, Namibia, and Botswana but are at an early stage in the project cycle and may need support with sourcing funds for feasibility studies, sourcing financing, and negotiating PPAs and other project agreements.

The following figures show the composition of active transactions in Southern Africa (that have not yet reached financial close) by stage, and how they have advanced through the project cycle.

Fig. 13. Breakdown of transactions



[8] For the purposes of this report, activities performed in Malawi and Zambia are listed under Southern Africa regional activities; however, moving forward they will be presented as stand-alone activities under separate Malawi and Zambia country reports.

Fig. 14. Movement of transactions by Stage

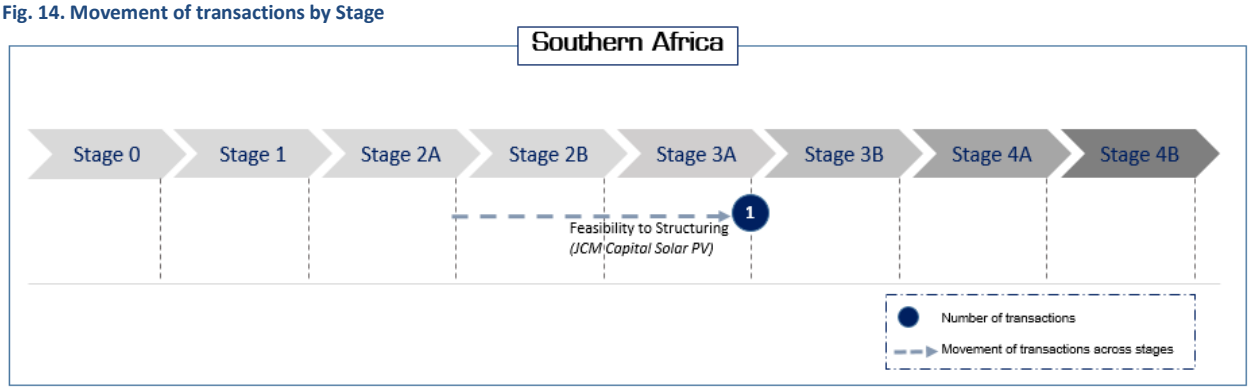


Table 10. List of generation transactions

Name	Country	Stage--1, 2a, etc.	Technology--Wind, Solar, etc.	MW
Mbongozi Power--Hydro	Malawi	Stage 3B - Financing	Hydro	41
Kabompo--Hydro	Zambia	Stage 3B - Financing	Hydro	40
Atlas Energy Solar PV--Solar	Malawi	Stage 3A - Project Structuring	Solar	40
Xaris--Gas	Namibia	Stage 3A - Project Structuring	Natural Gas	200
JCM Capital Solar PV--Solar	Malawi	Stage 3A - Project Structuring	Solar	30
Building Energy Solar PV--Solar	Zambia	Stage 2A - Feasibility	Solar	10
Biotherm Solar PV--Solar	Zambia	Stage 2A - Feasibility	Solar	10
Scaling Solar 1--Solar	Zambia	Stage 2A - Feasibility	Solar	50
Scaling Solar 2--Solar	Zambia	Stage 2A - Feasibility	Solar	50
Ngonye Falls--Hydro	Zambia	Stage 2A - Feasibility	Hydro	40
Luweya River--Hydro	Malawi	Stage 2A - Feasibility	Hydro	15
Kalahari GeoEnergy--Geothermal	Zambia	Stage 2A - Feasibility	Geothermal	20
Kumi Zuba--Solar	Zambia	Stage 2A - Feasibility	Solar	100
Rural Clinic Rooftop Solar--	Zambia	Stage 1 - Pre-Feasibility	Solar	0
Total/Western Power JV--Solar	Zambia	Stage 1 - Pre-Feasibility	Solar	50

Summary of PATRP's progress in Southern Africa during Q2 2016

Malawi. PATRP deployed transaction and legal advisory assistance to support ESCOM in developing/negotiating the following front-runner grid connected solar PPAs: (i) Atlas Energy Solar (40 MW); and (ii) JCM Capital (30 MW) (a Power Africa private sector partner). A first round review and mark up of both PPAs was completed in late May, and meetings were held with the developers and their respective legal advisors. Subsequently, the JCM PPA has undergone additional revisions, and has been the subject of numerous discussions and correspondence, which has significantly reduced the number of outstanding contract terms and should point to execution of the PPA next quarter. The focus will also turn to developing an Implementation Agreement and Grid Connection next quarter.

ESCOM has also shared term sheets for a further three projects that will also require PPA negotiation. To this end, and in order to facilitate completion of future PPAs, PATRP also worked on a standardized PPA for new unsolicited solar and dispatchable power projects, which will hopefully be finalized next quarter.

Botswana. PATRP completed a list of prospective transactions and potential for Power Africa support, in particular, off-grid opportunities identified during a trip to Gaborone. Additionally, PATRP met with

the principal of a development company that serves as the local partner to a Swedish developer that has a 1 MW solar plant that will sell power to Botswana Power Corporation (BPC) as the first IPP to sell power into the grid in Botswana.

Currently, a financing application for US$ 2.8 million is being considered by CEDA (Citizen Empowerment Development Agency), a recently formed, government-owned financial institution interested in the energy sector. Potential projects on the table:

- A 200 MW (proposed) solar PV plant (on which a feasibility study was completed several years ago) preferred as a PPP with BPC, but currently stalled.
- A 10 MW (proposed) solar PV project that will combine agriculture and energy in southern Botswana and for which land has been allocated—currently reviewing feasibility.
- A 1.3 MW solar PV plant, currently awaiting response from the Japanese regarding a grant to complete the feasibility study.

The company will provide more info on each so that we may determine whether there may be any role for Power Africa/PATRP.

Zambia. A Call for Proposals was issued under the Swedish Off-Grid Innovation Facility and submissions due August 8. To this end, PATRP is working with the Renewable Energy and Energy Efficiency Program (REEEP)—the agent for the facility—on qualifying bidders for financing eligibility under the program. Disbursement of initial tranche of funding (€6.0 million) must be completed before the end of 2016.

Two major mining concerns expressed keen interest in moving forward on independent power solutions, citing ongoing problems with power supply reliability and a realization that the heavily subsidized price they have been paying simply will not continue in the future. PATRP will be following up with both concerns with a view to employing the 'captive' power solution it has been promoting elsewhere in Southern Africa. Following on from this, a local meat producer signed a Letter of Intent with a Swedish developer regarding a detailed feasibility study on a proposed solar PV/biogas power plant on an off-grid, captive power basis. PATRP assisted the developer in developing and submitting a related funding proposal to ElectriFI.

PATRP advised a Power Africa private sector partner on the way forward on its 10 MW solar PV deals it was awarded several years ago. These are likely to fall under the initial round of the GET FiT program; the Power Africa Partner will be considered qualified and simply asked to quote on price.

PATRP met with the CEO of a U.S.-based company to discuss waste-to-energy opportunities. This was a follow-up to a meeting in Zambia in February. The company is currently looking at opportunities in Zambia, DRC, and Angola. In Zambia, the company is in discussions with Lusaka City Council about waste-to-power solution (up to 3,000 tons of waste per day). The company is also in conversation with OPIC and is looking for some early stage financing to kick-start development. PATRP agreed to assist in this regard.

Namibia. In conjunction with USAID, PATRP has scheduled meetings for the Lead Regional Transaction Advisor to visit Windhoek between June 30 and July 6. One of the key meetings will be with the national utility (Nampower) to determine potential for Power Africa/PATRP support and meetings with short-listed, licensed candidates for the interim REFiT program.

South Africa. As part of the captive off-taker strategy, PATRP worked with a Swedish developer/capital provider on securing agreements from two residential estates and a small, bottled water plant. These could become initial deals to close under this strategy.

PATRP met with four providers of early stage financing to learn more about appetite for transactions in Southern Africa and forwarded selected transactions to each of them. Follow-up conversations will occur with these

PATRP is engaging a developer in connection with a 40 MW furnace off-gas project under a bilateral PPA. Power generation is through organic rankine cycle. The EIA is in place, pre-feasibility is complete, and the PPA is under negotiation. PATRP's assistance would be focused on facilitating the PPA negotiations.

Mozambique. PATRP had several interactions with a Swedish energy consulting firm regarding a two-phase 3200 MW gas-to-power (1600 MW / phase) deal. The company will provide additional info to determine if there is potential for Power Africa/PATRP involvement.

Project Pipeline. PATRP met with a South African developer to discuss ongoing projects in South Africa (100-150 MW solar PV), and Tanzania (100 MW wind). The developer will provide additional details to permit PATRP to determine possible Power Africa/PATRP support and, if appropriate, will forward the same (and make an introduction) to PATRP's advisor in Tanzania.

Support to NEPAD. Through its embedded advisor at NEPAD, PATRP supported the following activities during the quarter:

- Zambia/Tanzania/Kenya (ZTK) Transmission Interconnector Project. With PATRP's assistance, NEPAD assisted the Office for Promoting Private Power Investment (OPPPI) in creating a presentation for the NEPAD Continental Business Network (CBN) meeting on May 23. Following the interest shown at the event, NEPAD expressed interest in arranging an investor roundtable for DFI's and the like to be held in September. NEPAD has offered technical support to the OPPPI by designing a Project Information Document (PID) to be used at the event, as well as offering event management and communications support. As matters currently stand, the roundtable is scheduled to be held at the start of September, but this is subject to approval from the Zambian Ministry of Finance. PATRP may be called upon to review and enhance the Project Information Document (PID).
- Suswa Geothermal project. The Kenya Geothermal Development Company (GDC) formally agreed to NEPAD assistance on the development of the Suswa project. Moving forward, NEPAD will provide transaction advisory assistance to GDC, and may need to reach back to PATRP/Power Africa for additional resources, as needed.

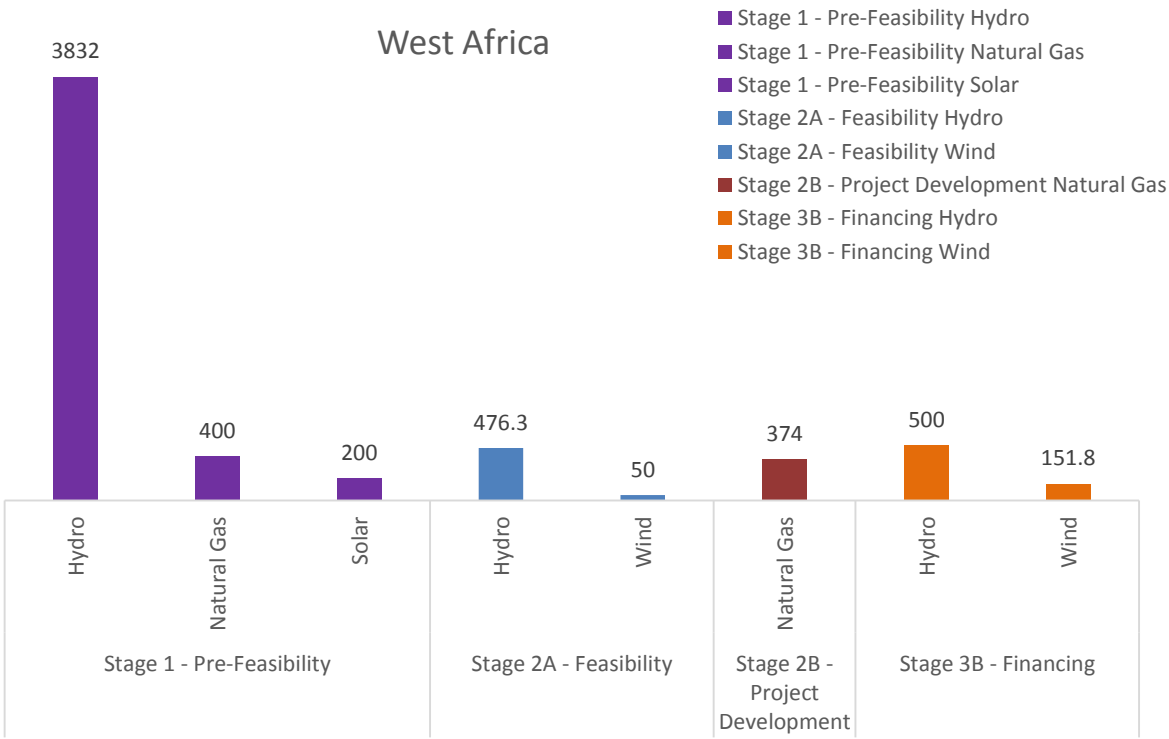
WEST AFRICA REGION[9]

PATRP boosted its West Africa presence in Q2 by adding an Energy Advisor based in Dakar who will support the Lead Regional Transaction Advisor and oversee new activities in Senegal, to include: (1) developing an energy demand model to inform transmission and distribution planning: PATRP plans to assist the regulator (CRSE) and state utility (Senelec), to revise their current demand forecast model and validate the various assumptions; and, (2) supporting the Ministry of Energy and Senelec to develop and implement an optimal energy mix strategy. The team in Senegal will also be buttressed next quarter with the deployment of a Regional BTG Advisor.

Within the broader region, the last quarter saw the existing Regional Transaction Advisor based in Abidjan finalize arrangements for his secondment at the AfDB'S Private Sector Operations Department from 1 September. He will serve as a key link between the Bank and Power Africa as related to attracting incremental capital investment into clean, renewable energy investments (from the Bank, potential co-financiers, and sponsors of the transactions it supports). PATRP will therefore look to replace him during the next quarter with another transaction advisor who, in the first instance, will assume the portfolio of transactions in Cote d'Ivoire.

The following figures show the composition of active transactions in West Africa (that have not yet reached financial close) by stage, and how they have advanced through the project cycle.

Fig. 15. Breakdown of transactions



[9] For the purposes of this report, activities performed in Senegal are listed under West Africa regional activities; however, moving forward they will be presented as stand-alone activities under a separate Senegal country report.

Fig. 16. Movement of transactions by Stage

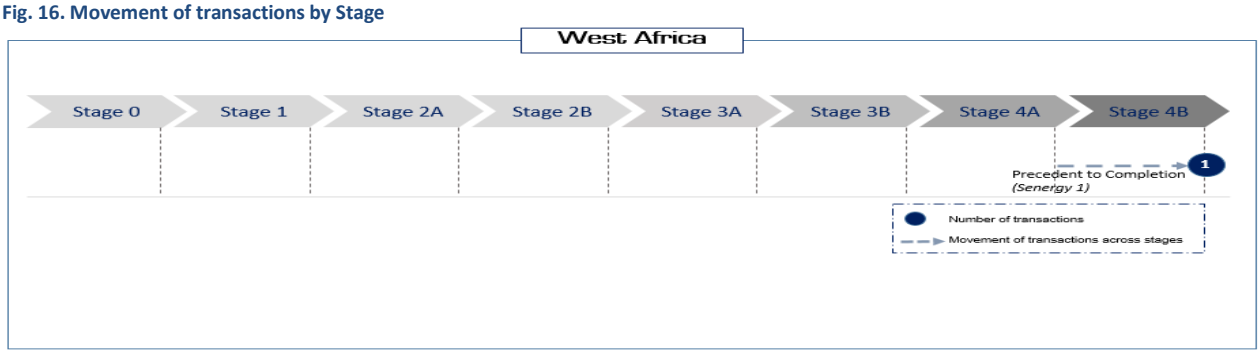


Table 11. List of generation transactions

Name	Country	Stage--1, 2a, etc.	Technology--Wind, Solar, etc.	MW
Taiba N'Diaye--Wind	Senegal	Stage 3B - Financing	Wind	151.8
OMVS Manantali II T&D + HD	Mali	Stage 3B - Financing	Hydro	500
Songon Power--Gas	Côte d'Ivoire	Stage 2B - Project Development	Natural Gas	374
Markala--Hydro	Mali	Stage 2A - Feasibility	Hydro	10
Gran Kingkon--Hydro	Guinea	Stage 2A - Feasibility	Hydro	291
E/L --Wind	Senegal	Stage 2A - Feasibility	Wind	50
Fello Sounga--Hydro	Guinea	Stage 2A - Feasibility	Hydro	82
Digan--Hydro	Guinea	Stage 2A - Feasibility	Hydro	93.3
Balassa--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	181
Bamafelle--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	58
Bonkon Diara--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	174
Boureya--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	114
Diaoya--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	149
Diaragella--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	72
Doundouko--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	127
Fakarra--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	70
Fetore--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	124
Fomi--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	110
Gaoual-C--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	49
Gozoguezia--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	48
Amaria--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	300
Kassa B--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	118
Korafindi--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	100
Koukoutamba--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	292
Kouravel--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	135
Kouya--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	86
Lafou--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	98
Madina Kouta--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	67
Mangoy--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	67
Morisananko--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	100
Netere--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	71
Tene--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	76
Tigeya--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	60
Tiopo 1--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	115
Tiopo 2--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	83
Hakkaounde--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	84
Senegal Scaling Solar Program I--Solar	Senegal	Stage 1 - Pre-Feasibility	Solar	100
Senegal Scaling Solar Program II--	Senegal	Stage 1 - Pre-Feasibility	Solar	100
Banda Gas-to-Power--Gas	Mauritania	Stage 1 - Pre-Feasibility	Natural Gas	180
Tourdou--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	56
Gao and Tayaboui--Hydro	Côte d'Ivoire	Stage 2A - Feasibility	Hydro	210
Tahibli--Hydro	Côte d'Ivoire	Stage 1 - Pre-Feasibility	Hydro	20
Tiboto--Hydro	Côte d'Ivoire	Stage 1 - Pre-Feasibility	Hydro	225
Kogbedou--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	44
Poudalde--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	130
Senegal HFO to LNG--Gas	Senegal	Stage 1 - Pre-Feasibility	Natural Gas	400
Saltinho--Hydro	Guinea	Stage 1 - Pre-Feasibility	Hydro	19

Summary of PATRP's progress in West Africa during Q2 2016

Côte d'Ivoire – Songon 374 MW CCGT and FSRU. After briefing the U.S. Ambassador in Côte d'Ivoire on challenges facing the project in Q1, PATRP continues to monitor progress on Songon. In Q2, the Council of Ministries issued a public release stating that the LNG Import Terminal Company was created and that it included national and international companies. The Ministry also indicated that the Abidjan port location for the Terminal would be temporary. The Government is interested in the Songon IPP but is not interested in a single private player taking control of the LNG imports in the country. Most likely gas to the Project would be provided by the LNG Import Terminal Company. Critical aspects remain, including the amendment of the PPA for bankability, and the Government decision on the supplier of the natural gas and conclusion on the FSRU solution.

Côte d'Ivoire – Tiassalé 25 MW - 35 MW Hydropower plant. PATRP recommended the project to USTDA, assisting the developer in applying for a grant to fund the Feasibility Study. Further, PATRP prepared the ToR; assisted in the Tiassalé "Data Room" set-up; and provided responses and clarifications to a USTDA appointed due diligence consultant. PATRP assisted the developer in identifying and engaging a U.S. contractor that is developing an offer to undertake the Feasibility. PATRP further negotiated the ToR, indicative Budget and other relevant documents due from the contractor before July 5. Also in Q2, PATRP presented the project to Project Preparation Facilities and particularly SEFA, which indicated that it would follow up later in the project cycle.

Côte d'Ivoire – Singrobo-Ahouaty 44 MW Hydro. PATRP discussed Power Africa assistance with the developer in May, and the developer indicated that Financial Close is on track to occur by Q4 2016. The lead arranger is FMO, and the West African Development Bank will also provide financing. Discussions are under way with Commercial Lenders for the financing of the substation / high voltage and medium voltage component of the project. The developer is in negotiations with an equity provider and all parties agree that PATRP would follow up as needed to reach Financial Close.

Côte d'Ivoire – Gao and Tayaboui 100 MW + 110 MW Hydro. A meeting between OPIC and the developer took place in June. Exchanges with MCC indicated that transport infrastructure linked to the hydropower projects may be eligible to be funded through the MCC Compact and requested additional information. MCC indicated that the compact is still under development and it will not contain funding for energy infrastructure. PATRP followed up with the Ministry of Energy's legal & commercial team involved in contract negotiations and proposed to assist them during concession negotiations for their hydro projects expected to be completed by Q4.

Côte d'Ivoire – Tiboto 220 MW Hydro. As the Tiboto Project MoU does not include the obligation of the IPP to finance, build and transfer the transmission lines, there is an open question of how the 300 km (225kV) interconnection infrastructure would be financed. Stakeholders were informed in Q2 that the high voltage evacuation lines cannot be funded by MCC. Financing from AfDB to fun the interconnection is an option. PATRP is monitoring the situation.

Côte d'Ivoire – Electricity Access. PATRP has been assessing potential technical assistance needs within the context of Côte d'Ivoire's "Electricity for All" plan ("Electricité pour Tous") and Rural Electrification plan (PNER), a portion potentially to be funded by USAID/PA. Côte d'Ivoire plans to set up a "Revolving Fund" to fund the interconnection cost for low-income pre-urban and urban customers under the "Electricity for All". The goal is to add one million customers within 5 years, and up to 125,000 new connections per year within the next 5-7 years in rural areas. The government appointed a consultant to structure the Revolving Fund and indicated that a presentation to donors would be made in Q3 2016. In addition, exchanges were held with US National Rural Electric Cooperatives Association (NRECA) in May to assess their expertise in setting up and monitoring/tracking electrification revolving funds and rural electrification programs. PATRP prepared a brainstorming list of potential technical assistance projects for USAID to consider during the

preparation of the Country Implementation Plan, based on the current country sector assessment. The list was presented to the Mission and to the EU Delegation advisor for feedback.

Senegal - Taiba Ndiaye (150 MW - wind). PARTP received an invitation from the project developer to participate in negotiations for the signing of the last amendment to the PPA the week of 18 July. PATRPs role will be to advise Senelec, with a focus on explaining the technical and financial aspects of the latest offering from the developer. The goal is to present the project to the OPIC Board in September.

Senegal – Senelec. PATRP was asked by USAID to review Senelec's generation master plan, demand assessment model, and provide assistance to the planning team to improve their skills. PATRP had a first meeting, gathered several documents and information, and conducted a gap analysis to target a terms of reference for a subsequent survey. PATRP discovered many flaws in the planning and is working with stakeholders on a recommended way forward.

DRC - Sombwe HPP (95 MW). PATRP signed a non-disclosure agreement with the developer and received a number of project documents, including the ESIA, which was forwarded to PATRP's environmental specialist for assessment. The ESIA study revealed no significant problems at this stage of the project. The project is a merchant power project and the developer is expecting to sell all its energy to nearby mines. Assistance would be required to source financing and support PPA negotiations with mines. A QTAT has been submitted and the project is approved as a Power Africa Transaction.

Sierra Leone – Bumbuna HPP II (266 MW). PATRP received initial documentation on the project that required review. An ESIA has been undertaken and was forwarded to PATRP's environmental specialist for assessment. A recommendation on possible PATRP engagement will follow next quarter.

Mali. PATRP engaged with USAID/Mali to co-ordinate support to the Malian government as it looks to create a PPP law, and promote greater private sector involvement in the electricity sector. The request came from the President of the Commission responsible for regulation of electricity and water. It has been agreed that the Lead Regional Transaction Advisor will travel to Mali next quarter together with the PPP specialist based at WAPP. This should give PATRP a better understanding of the needs in Mali and what resources would be needed.

Guinea - OMVS Koukoutamba HPP (294 MW). PATRP began its review of the project documentation, with a particular focus on the project's economic feasibility, and environmental concerns. To this end, PATRP will look at the utilization factor and the proposed investment cost. Once PATRP has concluded its review, a meeting will be sought with OMVS to discuss our findings and agree next steps.

Off-Grid/Small-scale. PATRP supported USAID/Senegal in developing the terms of reference for a desk study on power in agriculture in Senegal. PATRP received a separate request from USAID/Senegal to support a project in the "rice belt" area of Senegal – the USAID/Feed the Future Natal Mbay Program has been in the area since 2009 and is currently planning a project to build roads and would like to integrate the project with Power Africa. USAID/Senegal has proposed a field-visit in August to begin discussions with the project and begin data gathering. PATRP will participate in this activity.

PATRP established contact with the general manager of the rural electrification concession Energie Rurale Africaine (ERA), which is responsible for the implementation of rural electrification in the central and south-east regions of Senegal. ERA seeks to implement 56 new mini-grids and rehabilitate 16 others no longer operating (diesel generators). ERA's general manager will be in Dakar on July 22 and will meet with PATRP to discuss possible support.

PATRP met with Senegal's National Agency for Renewable Energy (ANER) to learn about the projects that ANER is supporting. Projects include: (i) a draft decree to give tax incentives to RE equipment

imports that was presented to the Prime Minister (however it has been stalled), (ii) feed in tariffs, (iii) solar pump projects, and, (iv) social projects to provide electricity hospitals, schools, religious centers, etc. The pilot projects are generally financed by international agencies, with limited private sector involvement. PATRP also met with representatives from the World Bank to discuss progress in Senegal and explore lines of collaboration. World Bank shared the inception mission report for the SE4All project focused on developing a national rural electrification investment prospectus. World Bank requested comments and proposed a meeting during the first week of June to discuss in depth the results of the baseline analysis.

PART 2 – SUPPORT TO THE COORDINATOR'S OFFICE

PATRP staff placed within the Coordinator's Office (Pretoria). In terms of institutional support under Objective 1 of the contract, PATRP continued to provide a program management staff member placed within the Coordinator's Office in Pretoria. In addition, during the quarter PATRP resourced and appointed a replacement Communications Specialist, and a Development Partnerships Specialist – both of whom will work within the Coordinator's Office from next quarter. The Development Partnerships Specialist will serve as a member of the Power Africa Development Partnerships team, supporting relationships with major bilateral and multilateral donors and technical partners, with which Power Africa has formal partnership agreements.

Monitoring and Evaluation (M&E). All PATRP Performance Indicators are now captured on PAIS and are current and up to date. PATRP continued its data review and updates of the PATT including Risk Mitigation, Green House Gas emissions reduced, training, policy and connections data.

Training. In Q2, PATRP conducted training and capacity building sessions in Tanzania, Nigeria, Ghana and South Africa. The table below shows the overall results.

Table 12. Training data

Indicator Name	Disaggregated By	Q2 Disaggregate	Q2 Total	Narrative/Comments
Training and Capacity Building Activities; Unit hours	# Male and (# of hours)	2355	3358.5	Training and Capacity Building activities were conducted in Ghana, Nigeria, Tanzania and South Africa.
	# Female and (# of hours)	1004		

Power Africa Tracking Tool (PATT). During Q2, PATRP's Project Management Team continued with updates and clean-up of PATT in preparation for the release of PATT app version 1.5, which was publicly launched in June 2016. In parallel, the transfer of the PATT public app to the USAID Power Africa Apple developer account, which will allow 'USAID Power Africa' to appear as the developer on the app, was completed.

PATRP is now focusing on developing PATT versions Webb 2.0, Apple 2.0, and Android 2.0, which are expected to be ready at the end of Q3.

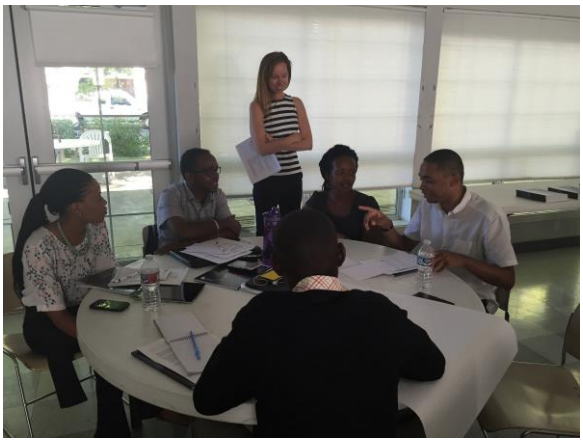
Other activities included:

- Providing updates to PATT 'frequently asked questions' (in preparation for the PATT public launch).
- Held discussions in Washington DC on PATT version 1.5 development with USAID's Chief Information Officer (CIO), and the Power Africa team on the rebranding and official launch of the PATT.
- Updated country summaries and uploaded them into PATT.
- Collecting PATT App usage statistics and submitting to USAID.
- Conducted training and detailed analysis of Cote d'Ivoire and AfDB transactions.

- PATT update and clean-up based on feedback received from points of contact (POCs) and TAs, this included updating transaction leads (POC, Country Desk Officers, Country Mission and Relationship Managers) on transactions.
- Submitted PATT Specification Documents, technical fact sheets and mobile App source codes to CIO for review and approval.

Gender Integration. The Gender Advisor continued to support the Coordinator's Office on gender integration primarily through the following activities that took place this quarter.

- Supported Power Africa's Women in African Power (WIAP) network, led from the Coordinator's Office. The nature of the support included updating and maintaining the WIAP database and a compilation of member bios, as well as managing the WIAP LinkedIn group, which has 234 members to date. Relevant news and resources are sourced to keep the page active and informative. The Gender Advisor referred possible speakers to the organizers of the upcoming East Africa Power Industry Convention, at their request. The local experts were identified from within the WIAP network.
- PATRP also provided logistical planning and support for the WIAP Power Breakfast Event at the Africa Energy Forum, June 2016, in London.
- Participated in the panel on *'Development Partners' Approach to Inclusive Infrastructure'* at the Infrastructure Africa Conference on 9 June. The talking points focused on Power Africa's approach and commitment to gender integration in the energy sector.
- Facilitated monthly meetings (teleconferences) with the Power Africa Gender Integration Working Group, which consists of McKinsey and AGI representatives as well as USAID. These calls provide a platform for information sharing between the Power Africa implementing mechanisms regarding gender integration in Power Africa. Specific requests for cooperation can be made amongst the group. For example, the PATRP Gender Advisor sourced a number of resources on gender and rural electrification for AGI to inform their support to Rwanda's rural electrification strategy.
- Reviewed, and provided input into, the following PATRP documents for gender integration: Nigeria Work Plan (October 1, 2015 – September 20, 2016); PATRP Work Plan (April 1, 2016 – September 30, 2016); Kenya Community Engagement Framework Scope of Work.
- Provided training on gender and energy to the YALI Energy Institute at the University of California-Davis on June 23 and 24. Photos from the training below.



Power Africa's Gender Advisor engages YALI Fellows in a small group exercise as part of the new Energy Institute hosted at the University of California, Davis, in partnership with Power Africa and the Young African Leaders' Initiative. (Photo by Jennie Konsella-Norene, UC-Davis.)

YALI Fellows share country experiences in groups at the new Energy Institute hosted at the University of California, Davis, in partnership with Power Africa and the Young African Leaders' Initiative. (Photo by Jennie Konsella-Norene, UC-Davis.)

Power Africa Private Sector Partners (PSP). Due diligence continued on prospective partners. In the second quarter of 2016, eight new due diligence memos were produced and seven were updated and re-submitted. Further, PATRP added new personnel to this work stream during the quarter, with the objective of improving quality and timeliness of the due diligence process.

PATRP also continued to provide technical resources to advance the Power Africa Private Sector Partner Customer Relationship Management Platform.

Environmental and Social Due Diligence Process for Power Africa Projects. Specific activities performed by PATRP's Environmental Specialist in Q2 included, amongst others:

- PESRM Checklists for a total of 13 PATRP supported transactions were completed in Q2, one of which was a re-screening following a review of the ESIA Report. Due to the attention around hydropower policy and support in this quarter, several large hydropower projects (> 50 MW) were screened.
- The PESRM Checklist for one of the hydropower projects in Guinea was completed (pre-ESIA completion). The project is situated within the proposed Haut-Bafing National Park within a core area dedicated to the conservation of chimpanzees and currently supports populations of over 5,500 individuals. PATRP's E&S specialist has recommended that continued Power Africa support of the project be closely monitored.
- The PESRM Checklist for one of the solar projects in Nigeria was competed to take into account the ESIA Report obtained from the transaction advisor. The Checklist and findings thereof was escalated due to deficiencies identified in the ESIA report. PATRP requested additional project information from the developer and clarity on the layout relative to existing sensitive receptors including a watercourse and human settlements.
- Prepared a presentation and contributed to discussion with transaction advisors on environmental and social impediments to financial close and hydro policy framework.
- Completed document detailing recommendations / deficiencies / concerns and associated PATRP actions for all transactions subjected to E&S Checklists to date.
- Conducted World Bank readiness review of a proposed Gas Fired Power Plant ESIA in Nigeria.

A detailed description of PATRP's compliance with the IEE conditions is set forth in Appendix 1 of this Report.

Small-Scale Renewable Energy (SSRE). In Q2 the PATRP SSRE team undertook the following tasks, which are beyond the country level activities presented in Part 1 of this report:

- Hiring process. PATRP began selection and hiring process of BTG regional and country advisors. During this period, PATRP selected and/or hired BTG advisors for Kenya, Nigeria and East Africa Region.
- Planning and management. PATRP began development of scope of works and work plans for the BTG team, particularly in Kenya, Ethiopia, Nigeria and Pretoria. The team also developed management protocols, training and onboarding procedures.
- PATT. The team initiated clean-up of BTG transactions in PATT and followed-up with transaction advisors on the same.
- Inferred Connections Model. Update to access model – PATRP updated the inferred access model to include four new fuel types/technologies: Fuel Cell, HFO, LPG (combustion), and LPG (turbine). Capacity factors for technologies were taken from the model's existing ESMAP source.
- Held several calls with a German based solar lighting company to discuss their business model and prospective finance opportunities. An introductory call was held to present the company's history and distribution model, and to discuss financing needs. A second conference call introduced the company to MCC Benin, to provide input to MCC in their development of off-grid activities and discuss their expected financial support to off-grid companies. The company also held a call with PATRP's gender specialist to discuss the benefits to women participating in its model, and how this can be leveraged for financing.

PART 3 – ISSUES AND PROPOSED SOLUTIONS

Staffing: In light of the supplemental scope of work agreed with USAID at the end of March 2016, PATRP has been tasked with meeting the new or expanded activities by deploying additional resources across sub-Saharan Africa. To this end, PATRP has added 38 new resident staff over the past two quarters, bringing the total number of resident staff to 72. A breakdown of this number is set forth in table 23.

Table 23. Breakdown of PATRP staff

Country	No. Staff (at the end of Q2)
South Africa	33
Côte d'Ivore	1
Djibouti	1
Ethiopia	5
Ghana	2
Kenya	7
Malawi	1
Nigeria	15
Rwanda	2
Senegal	2
Tanzania	3

Most notably, PATRP deployed the following additional technical and transaction advisory staff in the last quarter: (i) twelve staff to Nigeria – to include nine advisors tasked with supporting electricity distribution companies; (ii) five staff to Kenya; and (iii) four staff to Ethiopia. Other resident staff were added in Rwanda, Malawi, Senegal, and within the PATRP offices in Pretoria, to include a second DCOP (Technical) who will support the program's overall management, and oversee transmission and distribution work streams, with a focus on providing support across all Country and Regional teams on utility and regulatory performance issues that impact the attractiveness of a power system for investment, harm/delay new connections, or threaten the power sector's financial sustainability due to losses, inadequate tariffs, and poor collection performance. The new DCOP will also ensure that there is close coordination and robust cooperation between the various grid management programs and cross-border work (through EAPP and through the Nile Equatorial Lakes Subsidiary Action Program (NELSAP)) to eliminate overlap and leverage any lessons learned.

Moving forward, in the next 1-3 months PATRP will be engaging: (i) a transaction advisor in Cote d'Ivoire; (ii) a transaction advisor for Angola; (iii) BTG advisors in Uganda and Rwanda; (iv) two local BTG advisors in Nigeria; (v) local transaction advisor in Senegal; (vi) local transaction advisor in Kenya; (vii) advisor to ZESCO, Zambia; and (viii) advisor to the Cabinet Secretary, Ministry of Energy, Kenya.

Expenditure Forecast and Budget Realignment: Agreement with USAID on PATRP's supplemental scope of work at the end of March 2016 resulted in a contract modification and increase in the cost ceiling in early April. This has eliminated the lack of certainty on future funding levels and allowed PATRP to plan a robust set of activities and secure additional resources for the next 24 months.

Forecast of Upcoming Activities. The following activities are anticipated to take place in Q3 2016:

- Development of PATRP's FY 2017 Work Plan, and submittal to USAID for approval.
- Commencement of placement of PATRP Transaction advisor at AfDB
- Advancing the Integrated Resources Plan for Djibouti.
- Finalization and issuance of the RFP for the Chemoga Yeda I and II Hydro IPP project – Ethiopia
- Submittal of bids for the Metahara solar PV IPP project – Ethiopia
- Finalization of outstanding terms in the PPA under the Corbetti transaction.
- Deployment of additional resources to Ethiopia to initiate work stream with EEU focusing on the company's meter to cash operations.
- Secure issuance of the Government Letter of support for the Kipeto wind project – Kenya.

- Appointment of advisor to the Cabinet Secretary, Ministry of Energy and Petroleum - Kenya
- Kick-off meeting for PATRPs Community Engagement work in Kenya to promote a framework to Support IPPs.
- Submittal of final loss reduction report for LEC, Liberia.
- Publication of request for qualifications for procurement of new LEC management services contract
- Finalization of the JCM PPA - Malawi
- Lead Regional Transaction Advisor (West Africa) will travel to Mali with the PPP specialist based at WAPP to explore opportunities for PATRP support.
- Lead Regional Transaction Advisor (Southern Africa) will travel to Namibia to explore opportunities for PATRP/Power Africa support, particularly in connection with the national utility (Nampower)
- Communications Specialist, and a Development Partnerships Specialist will start work at the Coordinator's Office, Pretoria
- Submittal of final report on impact of CBN circulars concerning currency restrictions in Nigeria, which will address the feedback provided by USAID/Nigeria. The report will also be updated to reflect some of the recent developments in Nigeria, to include the fact that certain donor agencies have been granted waivers for funding or other support being provided to the energy sector.
- Performance of rapid gas assessment in Nigeria. The objective is to Identify the interventions and activities, that can be implemented over a 12 month period, that will: (i) result in additional power and electricity delivery from existing gas fired assets; (ii) create an enabling environment for future gas fired power generation; and, (iii) facilitate transactions for future gas fired power generation to ultimately increase electricity availability and access in Nigeria.

PART 4 – PERFORMANCE INDICATORS

Table 24. Performance indicators for the quarter

PATRP Q2/FY Q3 2016 PERFOMANCE INDICATORS			
Indicator Name	***Indicator***	***Disaggregate By***	**Q2 Actual**
Number of inferred connections from new generation; Unit #	*Number of inferred connections from new generation*	Solar (in MW)	4,078
		Wind (in MW)	0
		Biomass (in MW)	0
		Hydroelectric (MW)	2,197
		Gas (in MW)	0
		Geothermal (MW)	0
Generation Capacity Pending Financial Closure	*Number of MW from transactions that have not yet achieved financial closure*	Solar (in MW)	50
		Wind (in MW)	0
		Biomass (in MW)	0
		Hydroelectric (MW)	0
		Gas (in MW)	0
		Geothermal (MW)	0
Transactions Pending Financial Closure	*Number of transactions that have not yet achieved financial closure*	Solar (#)	1
		Wind (#)	0
		Biomass (#)	0
		Hydroelectric (#)	0
		Gas (#)	0
		Geothermal (#)	0
Generation Capacity Reached Financial Closure	*Number of MW from transactions that achieved financial closure due to USG assistance*	Solar (in MW)	29
		Wind (in MW)	0
		Biomass (in MW)	0
		Hydroelectric (MW)	0
		Gas (in MW)	0
		Geothermal (MW)	0
Transactions Reached Financial Closure	*Number of transactions that have achieved financial closure*	Solar (#)	1
		Wind (#)	0
		Biomass (#)	0
		Hydroelectric (#)	0
		Gas (#)	0
		Geothermal (#)	0
Generation Capacity Commissioned (Unit MW)	*Number of MWs of generation that have been commissioned*	Solar (in MW)	0
		Wind (in MW)	0
		Biomass (in MW)	0
		Hydroelectric (MW)	5
		Gas (in MW)	0
		Geothermal (MW)	0
Transactions Commissioned; Unit #	*Number of transactions that have been commissioned*	Solar (in MW)	0
		Wind (in MW)	0
		Biomass (in MW)	0
		Hydroelectric (MW)	1

		Gas (in MW)	0
		Geothermal (MW)	0
Utilization of Risk Mitigation Tools	*Utilization of risk mitigation tools by developers of qualified transactions supported by Power Africa*	Partial Risk Guarantee	0
		Political Risk Insurance	1
		Sovereign Guarantee	0
		DCA Guarantee	0
		Put-Call Option	0
Training and Capacity Building Activities	*Person hours of training completed in technical energy fields supported by USG assistance*	Male (# of hours) trained	2,355
		Female (# of hours) trained	1,004
Greenhouse Gas Emissions Reduced; Unit Metric tons CO_2e	*Greenhouse Gas Emissions Reduced*	Metric tons of CO_2e	10,661
Policy	*Number of policy reforms/laws/regulations/administrative procedures drafted and presented for public/stakeholder consultation to enhance sector governance and/or facilitate private sector participation and competitive markets as a result of USG assistance.*	Drafted	10
		Presented	10
		Regional	0
		National	15
		Private sector participation	7
		Clean and cleaner energy	8
		Small-scale and off-grid energy	0
		Gender equity	0
	Number of energy sector laws, policies, strategies, plans or regulations officially revised, adopted or implemented as a result of USG assistance that enhance energy sector governance and/or facilitate private sector participation and competitive markets, and/or encourage investment in clean and cleaner, small scale and off-grid options, and/or support gender integration in the energy sector.	Revised	2
		Adopted	12
		Implemented	8
		Regional	0
		National	12
		Private sector participation	7
		Clean and cleaner energy	5
		Small-scale and off-grid energy	0
		Gender equity	0

APPENDIX 1: COMPLIANCE WITH IEE CONDITIONS

IEE Condition	Requirement	Comments
1	Establish a Process for Tracking and Screen existing, new, and reclassified transactions.	▪ Screening: Of the transactions tracked by the Power Africa Transaction Tracker at the end of Q2 2016, 158 are PATRP supported transactions identified for further Environmental and Social (E&S) due diligence. The presumption remains (as per the IEE) that PATRP transactions with involvement of other USG Agencies, International Financial Institutions or Multilateral Development Banks are subjected to that organizations own due diligence procedures. ▪ PESRM Checklists: Of the 156 PATRP supported transactions 119 qualify for further due diligence through the PESRM Checklist. PESRM Checklists for a total of 13 PATRP supported transactions were completed in Q2 as follows: ○ Chemoga Yeda hydro ○ Platinum Power hydro ○ Songon Power Gas ○ EleQtra Wind ○ ContourGlobal Markala hydro ○ OMVS Manantali hydro ○ Metehara Solar ○ Souapiti hydro ○ Tams hydro ○ Panyam Solar (2nd Checklist) ○ Koukoutamba hydro ○ Xaris Gas ○ Bumbuna II hydro ▪ Re-screening: PESRM Checklist updates for one transaction (Panyam Solar) was completed due to the ESIA report being sourced.
2	Power Africa review of E&S checklist to determine whether continued support appropriate (for rescreening or new transactions).	▪ No specific transactions were identified in Q2 for which ongoing Power Africa support is not recommended.
3	Review of ESIAs for stage 3 and 4 transactions (Power Africa will not provide support to any Stage 4 transaction without a completed ESIA party to that transaction).	Of the 33 transactions at Stage 3, twenty ESIA Reports were sourced leaving thirteen ESIA reports still to be obtained (of which eight ESIA Reports are required for transactions at Stage 3A and five ESIA Reports are required for transactions at Stage 3B). Of the 3 transactions at Stage 4, all the ESIAs/permits have been sourced and reviewed by PATRP and no ESIAs / permits for Stage 4 transactions are outstanding.
4	Resources: Power Africa to make available links to E&S soundness policies and procedures of USG agencies as well as IFC Equator Principles and carbon principles. If USG agency policies are not available, Power Africa is to list regulations governing E&S impacts of agencies and provide links to their public statements.	PATRP has sourced E&S policies / procedures for OPIC, MCC, USADF, Exim Bank, USTDA in addition to IFC performance standards and guidelines, the Equator Principles as well as policies of other MDBs. This information is currently hosted on PATRP's SharePoint site and was shared with new transaction advisors.

IEE Condition	Requirement	Comments
5	Staffing: Power Africa through PATRP to make available an E&S advisor to: • Complete PESRM checklists • Provide E&S social soundness on activities • Serve as a resource to staff	PATRP has engaged an E&S advisor on a full-time basis, backstopped by a senior E&S consultant on an as-needed basis. The E&S advisor is also supported by PATRP's Gender Specialist, who provides subject matter expertise on gender components of the PESRM checklist. The E&S advisor regularly informs / updates TAs of environmental safeguarding and/or best practices and is a resource to TAs to advise on environmental issues.
6	PATRP, with support from Power Africa, to provide training to PATRP staff including transaction advisors, relationship managers, other USAID staff and implementing partner staff. Training will empower staff to address, promote and help overcome barriers to E&S soundness in PATRP transactions.	PATRP developed two training modules covering content and conditions of the IEE as well as PATRPs position for addressing environmental and social issues within the scope of the contract. The training also provided background on best practices and impacts and standard mitigation for specific generation technologies. Training was provided in person to PATRP Pretoria staff and via webinar to transaction advisors over the course of several weeks during Q1 and provided to some newer team members in Q2. The existing E&S training modules will be updated and systematic refresher training provided.
7	Advising: Power Africa / other relevant staff to provide recommendations to private sector partners on adhering to international E&S best practice.	▪ Partner assistance: A World Bank readiness review of the Kingline Gas Fired Power Plant ESIA (Nigeria) was conducted for the developer ▪ Checklist recommendations: Following on recommendations and action items listed in PESRM Checklists, the PATRP E&S advisor engages with TAs on next steps. Currently, the TAs are tasked primarily with querying shortfalls of ESIA to good/best practices, sourcing additional planning phase project information and offering support (where applicable) in terms of social and gender mitigation and integration.
8	Reporting: Report to Power Africa leadership any significant environmental and social issues with respect to a transaction or party they are engaged with.	▪ A document managed by the E&S specialist has been completed detailing recommendations / deficiencies / concerns and associated PATRP actions for all transactions subjected to E&S Checklists to date and shared with the Coordinators Office. ▪ In Q2 the Koukoutamba 292 MW hydropower project in Guinea was completed. The project is situated within the proposed Haut-Bafing National Park within a core area dedicated to the conservation of chimpanzees and currently supports populations of over 5,500 individuals. PATRP's E&S specialist has recommended that continued Power Africa support of the project be measured and closely monitored.
9	Screen hydropower transactions in PESRM supplement	A total of 8 hydropower transactions were subjected to the PESRM Checklist in Q2 2016. The supplementary PESRM Checklist was not populated in the majority of cases due to the absence of technical or environmental baseline information.